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Hunterian Lecture

ON

FEVER IN PULMONARY TUBERCULOSIS:

ITS SIGNIFICANCE AND THERAPEUTICAL INDICATIONS.

Delivered before the Hunterian Society on Oct. 8th, 1913,

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IN the first place I have to thank you, Sir, as President, and the council of this society for the honour you have done me in asking me to deliver this lecture. When your secretary, Dr. O. K. Williamson, conveyed your invitation to me, he suggested that I should choose a subject which had a distinctly clinical bearing. I warmly accepted the suggestion, so that I shall only touch very briefly on theoretical considerations, and shall make my observations of as practical a character as possible.

The subject of pulmonary tuberculosis has during the last few years attracted much notice from medical practitioners and laymen. Attention has been mainly concentrated on the afebrile cases, as these naturally yield better results, whatever the form of treatment that may be adopted. Consideration of febrile cases has not been so fully entered into, and I have therefore selected as my subject Fever in Pulmonary Tuberculosis: its Significance and Therapeutical Indications. I shall place a liberal interpretation on the word "fever," taking it to mean any rise of temperature. My endeavour will be to place before you the deductions which may be drawn from a study of the temperature chart from the points of view of diagnosis, prognosis, and treatment.

THE CAUSE OF THE FEVER IN PULMONARY TUBERCULOSIS.

The cause of the fever in this disease has led to much discussion. Fever has been described as a disturbance in the relationship between heat production and heat dissipation, and in pulmonary tuberculosis the balance is very easily disturbed. The tubercle bacilli themselves or their products are thrown into the blood stream, usually resulting in increase in body temperature. Some observers, as Dr. F. M. Pottinger, consider fever to be a result of the protective reaction of the body cells in response to the formation of chemical substances, probably the products of autolysis (albumoses). This question I do not propose to dwell upon this evening.

The occurrence of auto-inoculation, to which I shall refer later, has also given rise to differences of opinion. In certain cases of pulmonary tuberculosis, exertion, physical or mental, but especially the former, is followed by a rise of temperature, often accompanied by other symptoms, such as headache and general malaise. Evidence is forthcoming to show that this is due to a sudden output of bacteria or their products from the disease foci, and uncontrolled bad effects may follow, as after an excessive dose of tuberculin; on the other hand, good results may ensue, corresponding to the administration of an appropriate dose of tuberculin, leading to the conclusion that an auto-inoculation results from the production of a substance similar to tuberculin and possessing similar properties.

The products of organisms other than tubercle bacilli have been supposed to be responsible for the temperature in some cases of pulmonary tuberculosis; in other words, that a secondary or even mixed infection exists. Some observers have maintained that the temperature chart would indicate when such an infection is present, but I do not believe such is the case. Dr. A. C. Inman,[1] superintendent of the Brompton Laboratories, carried out a valuable research for the Local Government Board, and showed that from the temperature chart alone the presence or absence of a secondary infection could not be determined. Moreover, because micro-organisms are found in the sputum in addition to those of tubercle, it does not follow that they play any part in the pathological process that is proceeding. Dr. Inman demonstrated by means of the opsonic index that in many cases, although several varieties of micro-organisms were present, the indices to some of them were normal, thus showing that there was no evidence of infectivity in respect to those particular microbes. The conclusion generally arrived at is that although undoubtedly existing in certain stages of the disease secondary infections have much less effect on the course of the disease than was at one time supposed. Tuberculosis of the lungs is essentially an infection by the tubercle bacillus.

[1] THE LANCET, April 13th, 1912, p. 975, et seq.

THE SIGNIFICANCE OF THE TEMPERATURE CURVE.

I now turn to more clinical details. I would first observe that throughout this lecture, when I speak about temperature, I refer to the mouth temperature, which for clinical purposes I have found perfectly satisfactory. Attempts have been made to classify the temperature curves occurring in pulmonary tuberculosis on a rather too definite basis, but although certain types may be described, yet there is no curve characteristic of the disease. On looking at the temperature chart of a case of typhoid fever, or croupous pneumonia, the nature of the disease can be fairly easily surmised, but such is not the case with tuberculosis of the lungs. Speaking generally, a raised temperature is a sign of activity, provided that it is continuous. It may be continually above the normal, or there may be rises late in the day only, and the higher and more sustained the curve the greater are the active processes going on in the lungs. The reverse, however, does not hold good, and activity may be accompanied by a low or normal temperature; the prognosis in such patients is almost invariably bad; this phenomenon usually indicates a lack of power of response on the part of the body. This low temperature is occasionally seen after a period of fever, and unless this fact be remembered false hopes of improvement may be raised, for the fall may mean that the fatal ending is approaching.

Further, I would like to point out that the temperature is no guide to the stage of the disease, using the word stage in reference to pathological changes. There may be only a comparatively small area of lung affected and very slight physical signs over the lung, yet the temperature is high and shows large daily variations. In some such instances the disease may run a downward course throughout, finally ending in death, the destruction of lung tissue rapidly proceeding. I think such cases are most common in young female subjects from about 18 to 25 years old. On the other hand, extensive lesions may be present in the lungs, cavity formation being well marked, yet the temperature be of a favourable type. In these cases excessive auto-inoculation is not proceeding, although the disease is advanced from a pathological point of view. The immediate prognosis is by no means necessarily bad, and many patients show marked improvement under treatment, and are even able to return to work. These cases demonstrate in a marked manner that in order to form a definite and accurate opinion of a case it is absolutely necessary to study and observe every aspect of the case over some period of time; symptoms, temperature chart, and physical signs must all be considered together and in relation to each other, for to base a diagnosis or prognosis on one aspect only will assuredly lead to error.

Types of Curve in Acute Cases.

There are two types of fever indicative of acute disease which are common, and to which I should like to draw your attention. Before describing these I would first remind you of the variations which occur in the temperature chart of healthy individuals; 98·4° F. is accepted as the normal, but, needless to say, this point does not prevail during the whole 24 hours. There is a daily variation of from a degree to a degree and a half, being lowest in the early morning, and generally highest in the afternoon. It is the amount of variation in the temperature chart of a patient suffering from pulmonary tuberculosis to which I wish to draw your attention; and the observation of this swing yields useful information whatever may be the actual height of the temperature.

In a case of active pulmonary tuberculosis of moderate severity we sometimes find that the temperature is sustained above the normal (Fig. 1); that is to say, the morning temperature is raised as well as that of the afternoon and evening, but the daily variation is not greater than in the

normal curve. Under suitable treatment the fever often subsides, and the disease follows a favourable course. In the majority of these cases the disease is limited in extent, and there is but little softening of the lung tissue. In the second type the temperature is again sustained at a high level, but the daily range is greater than in a normal curve, perhaps two to two and a half degrees of oscillation (Fig. 2). On examination of the patient there will then be found indications that softening and excavation are proceeding. As a rule the larger the extent of lung involved the greater becomes the swing of the temperature; the record may become low in the morning and high later in the day, rising as high as 104° or 105°. Severe clinical symptoms often accompany this type of fever, indicating profound intoxication brought about by the absorption of toxic matters—chilliness, amounting to rigors, aching in the limbs, digestive disturbances, and great weakness. The aspect of the patient is also characteristic—marked flushing of the cheeks and a general lassitude and rapid breathing, which at once attracts attention. The second of these types is the more common, but a combination of the two types occurs more frequently than either alone. Similar to this curve is the one sometimes alleged to indicate the existence of a mixed infection. I have already referred to this subject and stated the reasons for the opinion that no evidence of such an infection can be drawn from the temperature curve.

Other Types of Temperature Chart.

The temperature chart of a slightly active case of pulmonary tuberculosis is very different. (Fig. 3.) The temperature is only slightly raised, and there may be periods in which the curve is almost normal. Nevertheless, at intervals the swing is greater than the normal. In many cases, although the temperature never rises above the normal, yet the daily variation is 2° or more. It will be found that patients with this type of curve often make but slow progress, and great care has to be observed with regard to the daily amount of exercise. This lability and irregularity of the temperature curve is one of the most important early evidences of tuberculosis of the lungs.

There are two other types of curve which are worthy of notice. In the one, the temperature is raised a degree or degree and a half every afternoon or evening (Fig. 4), becoming normal in the morning. In the other a larger swing is noticed (Fig. 5), the rise later in the day being over 100° F., reaching the normal again in the morning. The immediate prognosis in the former is usually fair; in the latter it is not so good, but the second type may gradually assume that of the first, indicating improvement in the patient's condition.

Another interesting type of curve is that of constant variations in temperature following upon increasing exertion. (Fig. 6.) The patient, perhaps, has been kept in bed until the temperature has become normal. Then he is allowed up for a couple of hours and a rise of temperature occurs. This may fall in 24 hours. Another rise is often seen when the patient is allowed up for four hours, again when six hours are permitted, and so on. Further, the excitement and incidental exertion of a visiting day, or the physical examination by the physician may be similarly indicated. In some cases, however, a fall does not take place in 24 hours, and a febrile temperature persists for some time—perhaps as long as three weeks or more—before a favourable curve again appears. A similar rise of temperature may occur after extraction of teeth or some unusual exertion, such as playing the piano. It is striking that the exciting causes are nearly always associated with some form of bodily exertion.

Whilst discussing pulmonary disease associated with high temperature of long duration, I would point out what may lead to diagnostic error—namely, that malignant disease of the lung may be accompanied with fever. (Fig. 7.) During part of the course of malignant disease of the lung the differential diagnosis may be by no means easy. Naturally, if tubercle bacilli are found in the sputum the diagnosis becomes evident (If the cutaneous or other tuberculin test be employed, further confusion may arise if a positive reaction is obtained, for this simply means that the individual has had a tuberculous infection, but it does not prove that the lung trouble is of a tuberculous nature. The true nature of the disease can often not be definitely diagnosed until a late stage, when enlarged glands in the neck or external tumour reveal the real nature of the malady. I need hardly remind you that there are other conditions, such as bronchiectasis, fœtid bronchitis, and so on, all of which may be associated with fever and need careful differential diagnosis from pulmonary tuberculosis.

The inverted type of temperature, the morning point being higher than the evening, is usually to be regarded as of serious import, although the curve need not be high. A case illustrative of this was that of a girl, aged 19, who apparently made good progress in the Brompton Hospital. She gained weight and her temperature was never above 99°, but it was of the inverted type. She was sent to the sanatorium at Frimley, but it was found useless to keep her there, as the slighest amount of exercise caused auto-inoculation which could not be controlled. Her subsequent progress was unsatisfactory.

Precautions necessary to ascertain the True Temperature.

In order that the true temperature occasioned by the disease may be ascertained certain precautions must be observed. Some of these will at once suggest themselves. A little time should be allowed to elapse after a meal, especially if the temperature is to be taken in the mouth. A slight rise is fairly common after a meal, and an interval of at least half an hour should therefore be insisted on. Again, the temperature should never be taken until an hour after exercise. In normal individuals an appreciable rise frequently takes place after exercise, but quickly subsides; the same events will occur in tuberculous cases, provided that excessive auto-inoculation has not taken place; if such has happened the temperature may remain raised for some hours or days. Further precautions are necessary in the case of patients who are able to take baths, whether hot or cold, sufficient time being allowed for the regulation of the subsequent change of temperature. The time of year also may have an influence, especially in debilitated and wasted patients, the temperature being depressed in cold weather and raised in hot. This, of course, particularly applies to mouth temperatures.

Another matter to which I wish to refer is a rise of temperature that sometimes precedes or accompanies the menstrual period. (Fig. 8.) The rise may amount to several degrees. Occasionally cough and other symptoms may become more pronounced during this time. Unless this periodical fever is recognised, a false idea of the temperature curve may be obtained. Especially is this likely to occur when tuberculin is given for diagnostic or therapeutical purposes. If a dose should be given shortly before the period the natural rise may be mistaken for a tuberculin reaction.

Amongst other conditions which may cause temporary rises of temperature in tuberculous subjects, apart from the course of the disease, are the occurrence of an ordinary "cold," probably the result of an infection by one of the catarrhal organisms, and an attack of gout. This affection, however, is rare in patients suffering from tubercle of the lung. The occurrence of hæmoptysis is often followed by fever, and this may be of important prognostic value. If the rise only lasts a few days no undue anxiety need be felt, but if the fever persists it may mean a very serious condition—namely, the rapid spread of the tuberculous process in the form of miliary tuberculosis, which proves rapidly fatal. (Fig. 10.)

THERAPEUTIC INDICATIONS.

Having pointed out some of the conclusions which may be arrived at from a study of the temperature curve in relation to diagnosis and prognosis in cases of pulmonary tuberculosis, I now wish to offer a few remarks as regards the therapeutic indications which may be derived from the same source. When the temperature is high, and especially if it continues for a long period, there is a natural desire to try to artificially reduce it, but whether this is always a wise proceeding is open to doubt. The most favourable temperature for the growth of the tubercle bacillus is about the normal temperature of the body, and it is possible that the existence of fever may to some extent prevent, or at any rate inhibit, the multiplication and activity of the organisms. Moreover, it has also been maintained that phagocytosis is more active, and the other defensive properties of the blood more developed, when a moderate degree of fever is present. Unless, therefore, a high temperature is maintained for some time active attempts to artificially reduce the temperature are not called for. But the prolongation of fever must be a strain

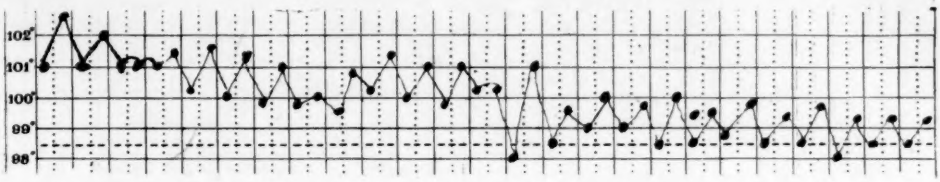

FIG. 1.—Showing sustained temperature with small oscillations. Early lesions at both apices. Patient made good progress.

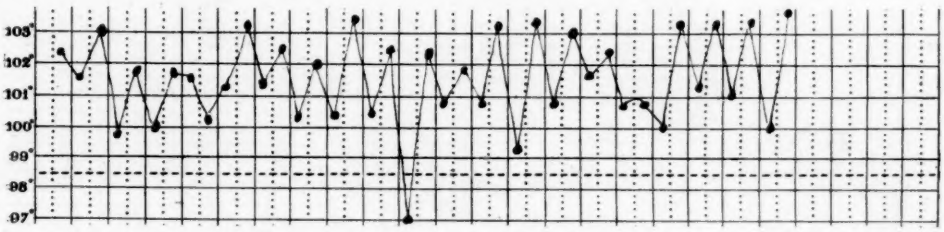

FIG. 2.—Sustained temperature with large oscillations. Active lesions in both lungs. Disease ran an unfavourable course.

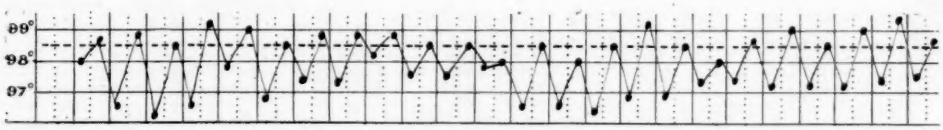

FIG. 3.—Slight activity. Infiltration of both lobes of left lung. No improvement manifested. Patient was not able to take active exercise.

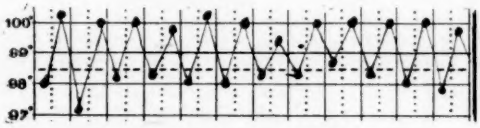

FIG. 4.—Showing slight evening elevation of temperature, falling each morning to normal. Limited infiltration of left lung. Favourable progress of disease.

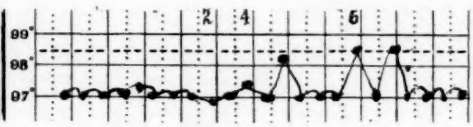

FIG. 6.—Illustrating auto-inoculation. The patient had a limited area of infiltration at the left apex. The figures refer to the number of hours out of bed.

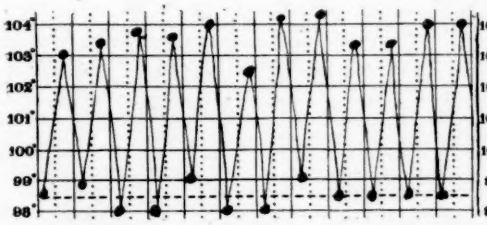

FIG. 5.—High evening elevation of temperature falling each morning to normal. Extensive softening in both lobes of left lung and infiltration of upper lobe of right lung. Unfavourable course of disease.

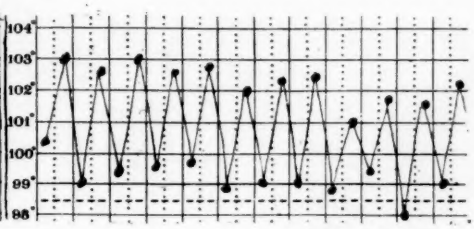

FIG. 7.—Chart of a case of sarcoma of lung.

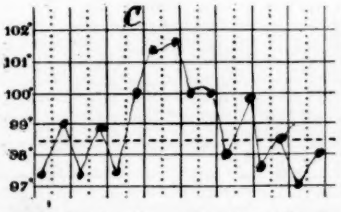

FIG. 8.—Showing rise of temperature during the menstrual period. Menstruation commenced on the day marked c. Patient had advanced lesions in upper lobe of both lungs.

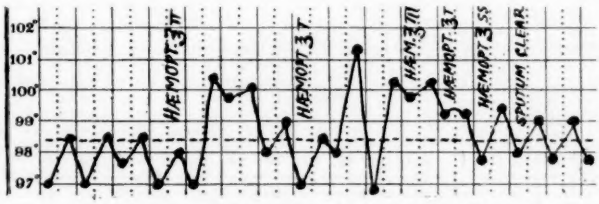

FIG. 9.—Effect of hæmoptysis on temperature. The patient had slight infiltration of the apex of the upper lobe of the right lung.

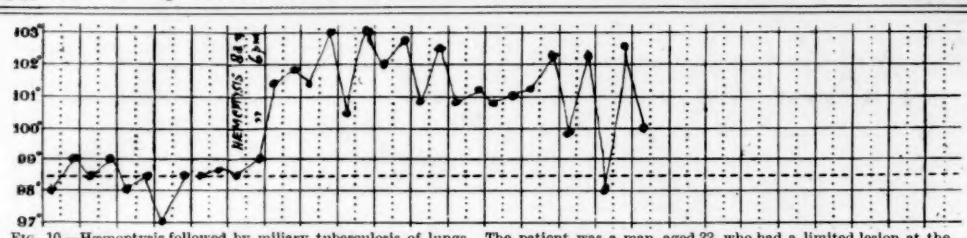

FIG. 10.—Hæmoptysis followed by miliary tuberculosis of lungs. The patient was a man, aged 22, who had a limited lesion at the apex of the upper lobe of the right lung. He was progressing favourably and able to go out into the garden. An attack of hæmoptysis was followed by miliary tuberculosis of the lungs which proved fatal in ten days.

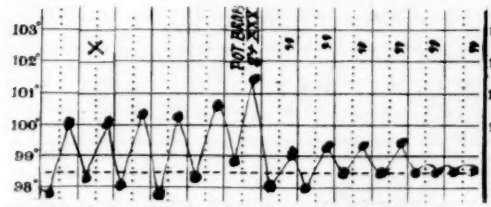

FIG. 11.—Effect of potassium bromide on the temperature in a neurotic patient. There was limited infiltration at the right apex.

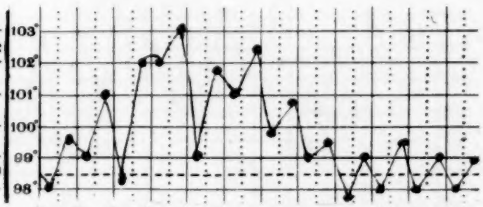

FIG. 12.—Showing the effect on temperature of rest. The patient had excavation in the upper lobe of both lungs.

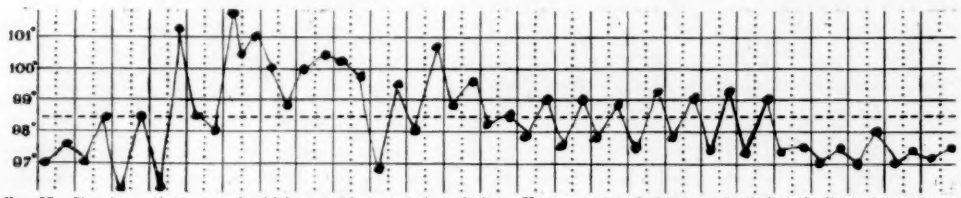

FIG. 13.—Showing patient on work which caused large auto-inoculation. He was sent to bed but not treated on the lines of complete immobilisation. Temperature did not settle for a considerable time. (From Dr. M. Paterson's work on Auto-inoculation in Pulmonary Tuberculosis.)

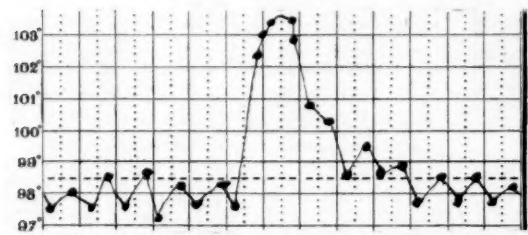

FIG. 14.—Chart of a patient at work which caused large auto-inoculation. He was placed on complete immobilisation and returned to work within ten days. (From Dr. M. Paterson's work.)

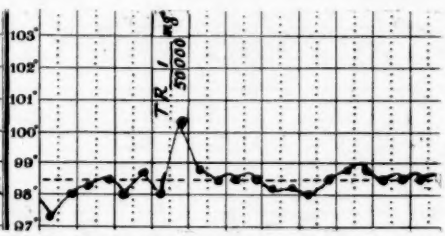

FIG. 15.—Showing febrile response to small doses of tuberculin followed by flattening of the curve. Patient had limited infiltration at right apex.

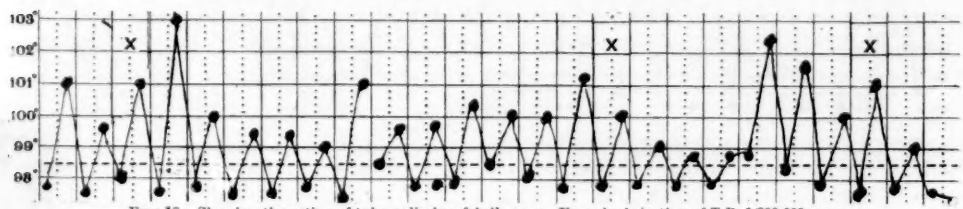

FIG. 16.—Showing the action of tuberculin in a febrile case. X marks injection of T.R. 1/200,000 mg.

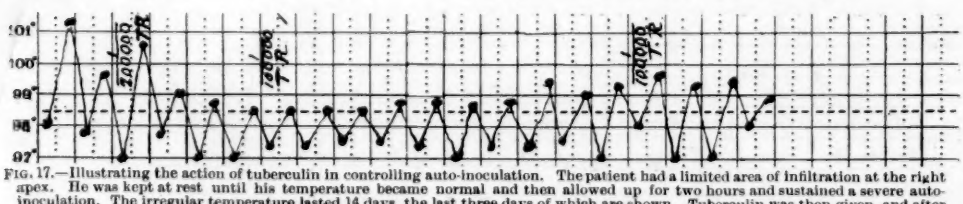

FIG. 17.—Illustrating the action of tuberculin in controlling auto-inoculation. The patient had a limited area of infiltration at the right apex. He was kept at rest until his temperature became normal and then allowed up for two hours and sustained a severe auto-inoculation. The irregular temperature lasted 14 days, the last three days of which are shown. Tuberculin was then given, and after successive doses the temperature became normal. He was ultimately able to be up all day and made good progress.

on the patient's strength, and therefore in some circumstances it may be desirable to try to lower the fever. Many drugs having antipyretic properties have been suggested. In the course of years I have made trial of several, but success has not been great.

The drug to be preferred, according to my experience, is pyramidon; it is claimed to be an amido derivative of antipyrin. The dose is from 5 to 8 grains, but patients tolerate the drug differently and respond to it in a varying manner. In some instances 5 grains given in cachets at night have proved sufficient, whilst in others 5 grains three times a day have been required. As a rule the drug is well borne, and depression has only occasionally occurred. In some cases excessive perspirations were noted. With cryogenin I have had no success. It may be given in doses of 7 to 10 grains in cachets about three hours before the maximum daily temperature is reached. I have not found the smaller doses produce much effect, while the larger ones have been attended by profound depression. Phenacetin and antipyrin I have not given in recent years, although some time ago I tried phenacetin fairly often, but the depression outweighed any advantages the temporary lowering of the temperature might have had. I believe, however, most physicians will agree in the opinion that in the majority of cases antipyretic drugs are not to be recommended. In some patients who are of a strongly neurotic disposition the temperature is very easily affected, and the curve may be irregular, even although the individual is kept at rest as far as possible in bed; under these circumstances the administration of bromides will be found efficacious. (Fig. 11.)

The Value of Rest in Febrile Cases.

A very different agent and far more reliable is rest. The importance of keeping a patient at rest during the active stage of the disease cannot be over-estimated. By this means auto-inoculation may be checked, and thus bacteria and their products are not thrown into the circulation. The period during which rest must be enforced naturally varies with individual cases. Sometimes a short period suffices (Fig. 12), but frequently some weeks or even months may be required. Under the latter circumstances great perseverance is necessary on the part of the patient, but experience shows the reward which follows patience and fortitude. Even apparently hopeless cases after a long period of rest begin to show improvement, but unfortunately, on the other hand, in spite of all care and patience, many cases pursue an unfavourable course from the outset. Rest should be insisted on until, in men, the temperature does not rise above 99° in the 24 hours; in women 99·2°, or even 99·4°, may be allowed. When the curve has maintained this level for four to six days, the patient may be allowed to get up for two hours and sit in a chair, and then the next day he can try moving about his room, the rest of the day being spent on a couch instead of in bed. If the circumstances of the patient permit it, he can be carried into the open air or lie on a couch, properly protected from cold, in front of the window. The time for getting up and the amount of exercise are then gradually extended, careful watch being kept on the temperature chart for any undue rise.

In cases which do not respond to these measures, and in which the patient has been allowed to sit up in bed and perform certain acts for himself, such as washing, writing, and so on, "absolute" rest may be tried. The patient is then treated as though he were suffering from typhoid fever, with the exception, of course, of the diet. He must not be permitted to do anything for himself; he must lie "like a log." He must be fed by the nurse, and must not make any voluntary effort whatsoever. The bed-pan, of course, must be used, and the patient is sponged down and must not wash himself. The visits of friends must be discouraged, and he should talk as little as possible. The beneficial effect of this treatment is especially marked when there has been severe auto-inoculation. Dr. Marcus Paterson, who was for some years medical superintendent at the Brompton Hospital Sanatorium at Frimley, and who elaborated the "graduated labour treatment" for pulmonary tuberculosis, found in the early days of his administration that when a patient exceeded the instructions that were given him, he occasionally received a severe auto-inoculation, the effects of which lasted from two to three weeks. These effects were fever (Fig. 13), headache, loss of appetite, and sometimes pain in the side. The temperature was frequently raised for the length of time I have stated, and subsequently some little time elapsed before the patient could again engage in the "grade" of labour at which he broke down. If, however, on the appearance of the symptoms the patient was placed on "absolute" rest, the temperature and the other symptoms subsided in a much shorter time (Fig. 14), and he could be speedily restored to the former grade of work. The return to the ordinary movements of everyday life has to be carefully supervised; in fact, as Dr. Paterson has himself expressed it, there must be graduated rest as well as graduated labour.

From my own experience I have not found absolute rest so successful when I have applied it to progressive cases with persistent fever, although I have frequently prescribed it. The fact that uncontrolled auto-inoculations have been occurring continuously and that the pathological process is actively extending explain the difference in the action of this measure in the two classes of cases. The diet during "absolute rest" should be given in as convenient a form as possible, as the patient ought to be fed, but "slop" diet is not necessary. Solid food may still be given unless symptoms of indigestion manifest themselves.

To secure the required rest drugs may sometimes be of assistance. It will be found that patients who have a very severe cough often exhibit a raised temperature. The effort of coughing, especially if prolonged for a considerable time, naturally entails considerable physical exertion, with the result that auto-inoculation follows. If a sedative cough mixture be given, so that the patient is able to obtain actual rest, then a more favourable temperature may be obtained. For the relief of these severe paroxysms of coughing I have found the linctus sedativus of the Brompton Hospital Pharmacopœia as efficacious as any preparation. The composition is: Liquoris morphinæ acetatis, min. viii.; ætheris chlorici, min. iii.; succi limonis, min. xv.; mucilaginem acaciæ ad fl. drm. i. One drachm to be taken when the cough is severe. Codeina or omnopon may also be tried, but I have not found them superior to the morphia preparation. Sponging with tepid water may be tried, but it only gives very temporary relief.

The Administration and Dosage of Tuberculin in Febrile Cases.

When rest and the ordinary drugs fail are there other methods at our disposal? Can tuberculin help us under the circumstances? Some authorities maintain that fever is a direct contraindication to the use of this remedy. I cannot support this view in its entirety. I would rather say that fever is an indication for the most careful administration of tuberculin, but does not absolutely forbid its employment. When treating afebrile cases with tuberculin it is difficult to form any definite criterion as to its effect; we may observe the reactions, but the actual effect on the course of the disease cannot easily be determined. In order to arrive at an absolute conclusion a large number of cases must be dealt with and must be watched for at least five to seven years. Pulmonary tuberculosis is a disease which tends to self-arrest; a large number of patients who are afebrile show improvement under ordinary routine treatment, and it is difficult to prove, because a case of this kind becomes better under the use of a certain remedy, that therefore the improvement is due to the action of that remedy. In judging of the progress of those afebrile cases treated with tuberculin, a further difficulty or source of error is added—namely, failing to distinguish between a tuberculin and a tuberculosis immunity. With febrile cases, however, the circumstances are rather different, for the effect of a remedy is more speedily apparent. For some years I have largely confined myself to the use of tuberculin in febrile cases, and I have met with a certain amount of success, and with the doses I employ I have never found any ill effects follow. When I first used the remedy on patients who had a raised temperature I allowed the patients to remain from three to six weeks in the wards in order to ascertain whether rest and the ordinary methods of treatment would produce good effects. Under the term "ordinary methods" I of course include life as far as possible in the open air or well-ventilated rooms and a good and sufficient dietary. If at the end of that period the temperature curve did not become lower the administration of tuberculin was commenced.

The choice of the particular preparation to be used naturally requires care. Some of the patients had fairly extensive lesions, and it was important, therefore, to employ a tuberculin and in such doses which, whilst exerting an

immunising action, would not produce a focal reaction. Koch's old tuberculin (O.T.) or perlsucht tuberculin (P.T.O.) would not be suitable, as they produce such a reaction; tuberculin residue (T.R.) or bacillary emulsion (B.E.) can bring about an immunising effect when given in small doses without focal reaction. I therefore invariably employ one of the two last named, and have obtained similar results with each, but if I have any predilection it is in favour of B.E.

The dose that should be employed in febrile cases must be extremely small. My usual initial dose is 1/100,000th mg.; sometimes 1/200,000th mg. After a dose is given a few days should be allowed to elapse in order to ascertain whether any result follows. If the temperature chart indicates no change after five to seven days the same dose is repeated. If there is then no change, or if no febrile reaction follows, a dose of 1/50,000th mg. should be administered, and another interval of five days allowed to pass; if there is no change another dose of 1/50,000th mg. is given. The same procedure is repeated with 1/25,000th mg. and 1/20,000th mg. If no lowering of the temperature is achieved by these means, or, in other words, if the same grade and type of fever continue, I think it is better not to proceed with the tuberculin.

If after the initial dose a rise of temperature occurs, the dose should not be increased; in fact, it is advisable to lower it. It is not usual to obtain a febrile reaction with such small doses, but that reactions do occur occasionally under these circumstances is shown by the accompanying chart. (Fig. 15.) If, however, after the initial dose there is a fall of temperature or flattening of the curve, another dose should not be given until the temperature begins to swing again. The interval then required between the doses varies, the principle being not to give another dose until the effect of the former one has passed off; this is shown by the temperature beginning to oscillate. The dose is then increased, and again the variation in the temperature is noted, giving a third and increased dose when are newed swing takes place. With regard to the sequence in the strength of the doses of tuberculin it is better to feel one's way carefully in the febrile cases, treating each patient in regard to the clinical state, the manner in which there is any or no response to the injections, and regulating the doses and intervals between the doses accordingly. At the same time the pulse must be noted, undue frequency necessitating a smaller dose and slower progress. The manner in which tuberculin acts in febrile cases is shown in the accompanying chart. (Fig. 16.) I am strongly in favour of avoiding febrile reactions if possible. The response I prefer to see is a flattening of the curve. (Fig. 15.)

Results of Tuberculin Treatment.

The results I have obtained with the use of tuberculin in febrile cases have varied considerably, but I can say that I have not found these minute doses productive of any harm, and the conclusion I have arrived at is, that when the temperature does not fall after a rest of some weeks under favourable surroundings tuberculin may be administered in the manner I have indicated, and in some instances it will be found efficacious in reducing the fever and in effecting general improvement. To express the matter in other words, the administration of tuberculin occasionally appears to produce an immunising effect sufficiently strong to turn the unfavourable course of the disease into a more favourable one. I am afraid the number of cases in which success is obtained is not large, but nevertheless I do consider that it is a remedy which is well worth giving when other measures have failed, provided that there are no direct contra-indications. If the patient is obviously exhausted by extensive lesions of the lungs, or if there is evidence of rapid disintegration of lung tissues, it is evidently useless to try to obtain an immunising response. The pathological condition is such as to forbid any such treatment. Also, if the type of temperature and physical signs point to miliary tuberculosis (Fig. 10), tuberculin must not be administered.

In some of the cases of pulmonary tuberculosis the effect of the tuberculin is different; it acts as an antipyretic, but has no effect on the course of the disease. The temperature is lowered and a tonic effect is produced, the patient feeling better after each injection, but the progress of the pathological processes is not checked. The length of time that the antipyretic action is continued varies, but it is usually short; nevertheless, it is well to give the remedy on account of the temporary relief which it affords to the patient.

The class of febrile cases in which tuberculin yields the most satisfactory results is that in which the patient is free from fever whilst at rest, but in which a rise of temperature occurs when exercise is taken. This may otherwise be expressed by saying that whilst the patient is at rest no auto-inoculation takes place, but when he gets up and attempts to walk, then auto-inoculation does occur. Tuberculin given in small doses apparently renders him immune to any dose of toxin which he himself can manufacture. I show the chart (Fig. 17) of a case of this nature which well illustrates the beneficial action of tuberculin. By persevering with the treatment a patient, who at first could not be up for two hours without a severe auto-inoculation, is able to be up without fever. Tuberculin has now accomplished its object, and the case may be treated as an afebrile one. The procedure to be adopted is similar to that just described in the case of persistently raised temperature, the initial dose being usually 1/100,000th mg. B.E. The same reduction of temperature sometimes occurs as a result of subjecting the patient to suitable slight movement, such as allowing him to get up for two hours. The explanation of this apparently anomalous phenomenon is the same as applies to the action of tuberculin in febrile cases.

The question of mixed infection has already been discussed, and the idea has naturally been expressed that possibly a vaccine prepared from one or more of the other organisms present might be of value. So far the results obtained have not been altogether encouraging in advanced cases. In less severe and suitably selected cases diminution of fever and in the amount of expectoration appears to have been obtained, with definite relief to the patient.

Conclusions.

From a review of the above considerations it may be assumed that a rise of temperature, apart from accidental factors, may be considered an indication of activity, and that the most reliable means for reducing activity is rest. If, therefore, a patient who has been progressing favourably exhibits a rise of temperature, it must be accepted as a sign that rest must be insisted on. In other words, a patient suffering from pulmonary tuberculosis must live in accordance with his temperature chart. Any increase of cough and expectoration, headache, general malaise, and so on, should always be regarded as calling for a record of the temperature for a few days, and should a rise be found the necessary measures should be taken in accordance with the general features of the case.

In conclusion, I have to offer my sincere thanks to my house physician at the Brompton Hospital, Dr. A. S. Hahn, for the great assistance he has been to me in searching for suitable temperature charts for illustrating my remarks; and, finally, to reiterate that in delivering this lecture my aim has been not to give a scientific disquisition on the factors which produce fever in pulmonary tuberculosis, but to offer some suggestions which I trust may be of value in actual practice.

ROYAL SANITARY INSTITUTE.—The provincial sessional meeting of this institution will be held on Friday and Saturday, Oct. 17th and 18th, at Newcastle-upon-Tyne. On the first day there will be a meeting in the council chamber of the Town-hall at 7.30 P.M., when a discussion will be opened by Professor H. J. Hutchens, D.S.O., bacteriologist to the Newcastle-upon-Tyne corporation, on Some Points in the Relationship of Human to Bovine Tuberculosis; and Dr. S. J. Clegg, assistant medical officer to the borough, and Mr. William Hudspeth will open a discussion on Housing Problems in a Northern Industrial Town. Among those who have promised to take part in the discussion are Sir Thomas Oliver, Dr. T. M. Allison, Dr. H. Renney, and Dr. E. M. Smith. Dr. Philip Boobbyer will preside. On the following day there will be a short demonstration of the new electrolytic treatment of industrial lead-poisoning, a visit to lead works, and a survey of the housing reconstruction scheme at Forth Banks. After luncheon visits will be made to places of local interest. Tickets may be obtained from Dr. H. Kerr, medical officer of health of Newcastle-upon-Tyne, and of the secretary of the Royal Sanitary Institute, 90, Buckingham Palace-road, London, S.W.

An Introductory Address
ON
EXAMINATIONS, EXAMINERS, AND EXAMINEES.

Delivered at the Opening of the Winter Session at St. George's Hospital Medical School on Oct. 1st, 1913,

BY SIR WILLIAM OSLER, BART., M.D., F.R.S.,
REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD.

GENTLEMEN,—In every department of human knowledge men are asking guidance in the solution of a world-old problem—how to train the mind and heart and hands of the young. The past and the present are in the melting pot—the moulds are ready, and all await with eagerness the result of the casting, and none with greater eagerness than our own profession. For we are in a quandary. Naturally conservative, we are bewildered by the rapidity of a forced progress and change. There is a new outlook in every department—not alone in the fundamentals of science and in methods of practice, but in the relations of the profession to the public and to the State. The actual care of the sick, once our sole duty, is now supplemented by such a host of other activities, social, scientific, and administrative, that an ever-increasing number of our members have nothing to do with patients as such. But the chief difficulty is the extraordinary development in every subject of the curriculum—a new anatomy, a new physiology, a new pathology, new methods of practice, to say nothing of phenomenal changes in physics, chemistry, and biology. Everywhere increased complexity and mind-burdening terminology. What is the teacher to do? And more important, What can the poor student do, confronted with so much new knowledge and a Rabelaisian onomatomania? How simple was a cell in the days of Schwann and of Schultze—nucleus, nucleolus, protoplasm, and cell membrane; to-day in one of the very briefest of recent descriptions I counted 40 new names, not one apparently superfluous. Turn to the index of a new treatise in embryology, to a work on immunity, or to a text-book on neurology, and you will appreciate the extraordinary complexity of the diet of the modern student. Even the titles of the journals startle, and to read intelligently an article in the *Zeitschrift für Chemotherapie* or in the new archives dealing with immunity and metabolism requires a special education.

The truth is, we have outrun an educational system framed in simpler days and for simpler conditions. The pressure comes hard enough upon the teacher, but far harder upon the taught, who suffer in a hundred different ways. To help you to realise this pressure and to suggest measures of relief are the objects of this address.

EXAMINATIONS AND THEIR RELATIONS TO EDUCATION.

What a student knows and what he can do—these are judged by examinations, oral, written, and practical. Tests of progress, tests on behalf of the public of fitness to follow certain callings, they have always loomed large in educational systems. At the best means to an end, at the worst the end itself, they may be the best part of an education or the worst—they may be its very essence or its ruin. Helpful if an integral part of the training, they may, and do, prove the intellectual ruin of many good men. Long practice as an examiner—year by year since 1875—in many subjects, in many methods, and in many places, an intimate relation with a large body of students, and a keen interest in medical education give me the assurance, if not of wisdom, at least of experience. Moreover, at the old universities survives a mediæval tradition of the omniscience of the professor, and with my brother Regius of Cambridge I enjoy the rare privilege of examining in every subject in the curriculum, from organic chemistry to obstetrics, a privilege with this advantage—it enables me to see the work of many examiners.

Regarding examinations, I have one question to ask—Are they in touch with our system of education? and one suggestion to make—That from the day he enters the school, in laboratory, class-room, and wards, the work of the student should count, and count largely, in the final estimate of his fitness.

The Influence of Examinations on Medical Education.

Apart from a general feeling of dissatisfaction with the present system, two things strongly suggest a negative answer to the first question. As a discipline of mind and memory examinations play a leading part in all educational schemes. How they may finally control and sterilise the mind of a nation may be read in the story of China. For this has come about, not from lack of brains, not from any failure to appreciate the value of learning, not from any defect in the system itself, which is more rigid and exacting than anything in Western life, but from the blighting influence of an education directed to a single end, the passing of examinations. To test an education by its practical results at the table is to sin against the spirit of the Greeks, who first taught the fundamental lesson that the pursuit of knowledge to be productive must be disinterested. Nothing is more fatal to a true intellectual training than a constant preoccupation with its practical results. To be of any value an education should prepare for life's work. To train the senses for observation and the mind for reasoning, and to acquire a knowledge of the human machine and its disorders, a man spends five or more years at a medical school. Given a knowledge of the sciences on which it is based there is no more fascinating study, since medicine is the only one of the great professions engaging equally head and heart and hand. In its subject matter there is everything in its favour, and it is the easiest possible thing to carry out John Locke's primary canon in education—arouse an interest. With our present methods there is scarcely a subject which cannot be taught easily, and so many of them are practical, manipulative, and not at all difficult to acquire. To an inquisitive mind the study of medicine may become an absorbing passion full of fascinating problems, so many of which present a deep human interest. In the long category of man's conquests none are more brilliant than those with which a teacher of medicine can inspire his class. It is hard indeed to name a dry subject in the curriculum. And yet in an audience of medical students such a statement nowadays raises a smile. Why? Because we make the examination the end of education, not an accessory in its acquisition. The student is given early the impression that he is in the school to pass certain examinations, and I am afraid the society in which he moves grinds this impression into his soul. Ask *at* what he is working, and the student will answer *for* his first M.B. or his final. The atmosphere is Chinese, not Greek, and too often the one aim is to get through. We have become quite shameless about it, and practically admit a failure in our teaching when we advertise special tutorial classes for the different examinations, and consign a large proportion of our pupils to the tender care of "grinders"—and to no purpose! The spirit is taken out of instruction, and teacher and taught alike go down into the valley of Ezekiel—where they stay among the dry bones.

The Number of Rejections.

And a second circumstance proclaims loudly how out of touch are our tests with our teaching. The qualifying examinations of this country are well organised and admirably conducted, and, speaking by the book, I may say that nowhere is the knowledge that a man can use so freely tested in the laboratory and at the bedside. And it has been so for several generations, yet year by year the General Medical Council issues a report that gives any teacher food for serious thought, as it demonstrates, beyond peradventure, how completely out of touch he or the student, or both, has got with the examiner. A medical school is a human factory, turning out doctors as the finished product at the end of five years of careful preparation and fitting of the mental machinery. Failure is incidental to every human effort, and even the Rolls-Royce Company turns out cars from their shops that fail in the tests, but not many. But from our shops, after five long years or even more, we send our medical motors to be tested for the road by the official experts, and nearly one-half are declared to be defective and sent back to the shops. Use and Wont, those "grey sisters," have so dulled the edge of this bitter experience that we have become accustomed to conditions nearly insupportable. Year by year for a generation the returns in the two great final subjects, the most attractive and the easiest to teach, show from 35 to 45 per cent. of rejections.

To the question much thoughtful attention has been given, and in the General Medical Council so far back as 1896

Mr. Pridgin Teale introduced a motion with the following preamble: "That the present system of accumulated examinations and the enormous increase in the number of rejections resulting from it are not only unjust to the student but damaging to medical education." Mr. Teale pleaded wisely and forcibly for a reduction of the examinations and for the substitution in certain subjects of certificates from the teachers and class examinations.

The Council reports show that the percentage of rejections at the final examinations has progressively risen from 12·4 in 1861 to 22·2 in 1876, to 34·8 in 1886, and to 41·9 in 1895. Mr. Teale, who quotes these figures, remarked that with the multiplication of examinations the more fatal do they become. The figures for the five years 1908 to 1912 show a continuation of the upward movement. Take the great final subjects, medicine and surgery, at the three Boards before which we may say the average student presents himself. I will put the collected figures as concisely as possible. The English Board: medicine—passed 1842, rejected 1135, percentage 38·12; surgery—passed 1821, rejected 1506, percentage 45·23. Scotland: medicine—passed 489, rejected 653, percentage 57·18; surgery—passed 492, rejected 731, percentage 59·77. Ireland: medicine—passed 322, rejected 231, percentage 41·77; surgery—passed 326, rejected 239, percentage 42·30. In the five years a total of 4572 students were examined at the Conjoint Boards of the three kingdoms in medicine, of whom 2019 were rejected, a percentage of 44·16. Of 5105 examined in surgery 2475 were rejected, a percentage of 48·48. Take for comparison the three universities—Edinburgh, Oxford, and Cambridge—for the five years ending 1912. At the Scotch capital there were 985 examined in medicine, of whom 267 were rejected, 27·10 per cent.; in surgery 974, of whom 317 were rejected, 31·52 per cent. In Oxford, where the three final subjects are taken together, it is impossible to say upon which subject a man came down, but in the final examination of 135 candidates 47 were rejected, a percentage of 34·81. At Cambridge during the five years, in medicine of a total number 519, 365 passed and 154 were rejected, a percentage of 29·67; and in surgery of a total 603, 233 were rejected, a percentage of 38·64.

There is not so much difference, you notice, between what may be called the pass men of the Conjoint Boards and the men entering the universities, and I do not believe there is any special difference in stringency between the Oxford and Cambridge examinations and those of the London Conjoint Board. There are two other examinations which the élite of the student body affect. How do they stand? All regret that in London only the select and the elect attempt to get the degree of their own University. And it is difficult! Twice in the past five years more students have failed than have passed the final subjects for the M.B. The total figures for the period are: of 1061 candidates examined 481 were rejected, a percentage of 41·01. And, lastly, to one other qualification, greatly prized, sought only by the very best men, the Olympic athletes of their classes, I will refer—the F.R.C.S. Eng. Consider, please, how carefully this group is trained—only the very best venture to compete, and they have a diet of which the intellectual calories are gauged with surpassing accuracy. There is no doubt they are our very best, the picked steeple-chasers of our stables. How do they fare? I am almost ashamed to read the figures. Your ears have tingled already, but only those hardened by familiarity will not be shocked at the demonstration of such a chasm between education and examination. Of 1186 men who have tried for the primary Fellowship examination of the Royal College of Surgeons during the past five years 821 were rejected, 69·45 per cent. Of 680 men at the final Fellowship examination 294 were rejected, 43·23 per cent. The high-water mark of examination futility was reached in May, 1912, when of 118 candidates for the primary Fellowship only 31 were approved. These are picked men, our very best students, the most carefully prepared, who rarely attempt the trial without months of extra study and attendance upon grinding classes. Of the ploughed I have known personally, many seem to have been over-trained, others had spent their time in unprofitable original research; but all, passed and plucked alike, I maintain, are of the highest type of our students, whose calamities proclaim to the world the breakdown of our present educational system.

The failure is general all along the line and in all grades—at the licensing boards, at the older Universities of Oxford and Cambridge, at Dublin and Edinburgh, at South Kensington, and at Lincoln's Inn-fields; with singular uniformity all tell the same tale. There have been uneasiness and talk, but too much self-satisfied indifference, and even after the famous rout for the primary Fellowship in May last year I am told that satisfaction was expressed with the scope and method of the examination! Satisfactory to the examiners, perhaps, though I doubt it; but most unsatisfactory to the teachers, most painful to the students, and by no means a pleasure to the public as represented by the parents.

How May Relief be Obtained?

I venture to offer a few suggestions. First, by simplifying the curriculum to give the students more time. Allow the teachers a free hand in the matter of systematic lectures. Let them be reduced to a minimum or abolished altogether. One advantage they have—subjects may be dealt with which cannot possibly be illustrated in the wards. But such may be better presented in the "seminar" form, the senior students arranging the subjects among themselves under a skilled assistant. London students still have too many lectures in medicine and surgery to attend; Scotch students many more. I do not speak without experience when I say that the subject of medicine, for example, may be taught without the set lecture. The lecture has its value, a precious one from some lips—a Watson's or a Trousseau's; but its day has gone, to give place to other methods better adapted to modern conditions. Think of the saving of time if the lecture list was snipped in half, or if the lecture was limited to a few subjects, such as physiology and pathology, and if it were an offence for a senior student to be seen in a lecture-room!

Then let us boldly acknowledge the futility of attempting to teach all to all students. Burn the anatomical fetish to which we have sacrificed long enough, and to our great detriment. Just glance at "Cunningham's Anatomy"—1465 pages, many in small type, not one of which is without a water-jump for the first Grand National of the medical student. It is barbaric cruelty with so much ahead to burden the mind with minutiæ which have only a Chinese value—a titanic test of memory. To schedule a minimum of the essentials should not be difficult, once the great principle is acknowledged that in all departments of the curriculum only a few subjects can be mastered thoroughly. I am afraid the secret of the tragic tale I have related lies in a quotation which Socrates made to Alcibiades:

> Full many a thing he knew,
> But knew them all badly.

I acknowledge the difficulty of defining in different subjects a minimum of the essential, but it is not insuperable, and such schedules are issued in some universities.

Secondly, relief may be obtained by giving credit for work done throughout the course, changing the present system of "signing up" for one of reports by demonstrators and assistants on the character of the work done by each student. Let all who teach examine. Let education and examination go hand in hand. Let the day's work tell from the moment a student enters the school. Everyone from the junior demonstrator who supervises the student's first dissection to the professor—all should weigh while teaching. Day by day as I see John Smith in the wards, and read his notes, and watch his clinical work and discuss the features of the patients, or as he narrates his case to the class about the bed and he and I have a Socratic dialogue, instruction and examination go hand in hand, and in such a way that at the end the formal tests should be but an amplification, an extension, and an inclusion of the scores of examinations which have been part of the routine of his life. Perhaps at present Utopian, this plan will be feasible in a new and reorganised generation; indeed, it is feasible now in self-contained universities. Once accept the principle that instruction and examination should go hand in hand and the difficulty is solved. The returns are automatically passed on to the head of the department. Yes, but someone will say, "Take the judgment of a group of young teachers? It is absurd!" Not a bit. They see more of the students, come into closer contact, and are better able to judge of the quality of their work than the professor, and much more than any outside examiner. According to the character of his work a student should acquire much or little merit, and

should be able to take to the examination table enough to pass, or at any rate to make the final test in any subject *pro forma*. Where the classes are small, as in many of the provincial universities, this plan could be easily worked. I have had practical experience of it and came to the conclusion early that the judgment of the man who was fit to teach could be taken in estimating the progress of the student's education. And the system is being adopted. A few months ago I went into the beautiful clinical and pathological laboratory of the new Toronto General Hospital, and in one room I found an examination in pathology going on. The candidate had a set of cards in his hands, on each of which were written the details of the post-mortem examination he had made with a careful discussion of the case. Pass or pluck really depended on the cards a man held. He brought his marks with him—instruction and examination had gone hand in hand. I was delighted to hear from Professor MacKenzie that the system, introduced at McGill by my pupil and successor, the late much lamented Wyatt Johnston, had proved very successful in both Canadian schools.

Thirdly, simplify the examinations. Cut off some of the written papers. In the final subjects the long report on cases, the bedside *viva*, supplemented if need be by a special "oral," will give examiners the necessary knowledge of a candidate's mental outlook. If they will consider, not how much he knows, but how he knows what he knows, the long "written" is superfluous. As one watches a man handle a patient it is easy to tell whether or not he has had a proper training, and for this purpose 15 minutes at the bedside are worth three hours at the desk. We must substitute for the quantitative estimate the qualitative, and judge the student as much by manner as by matter.

Fourthly, when possible, evidence of original work should be substituted for examination. Think of the stimulus to British surgery if, in place of the Egyptian tyranny to which our best students now slavishly bow, the President and Council of the Royal College of Surgeons selected for the Fellowship each year the 15 or 20 of the men under 30 who had distinguished themselves most highly in surgical research. It would change the mental attitude of the younger generation, instil the spirit of Hunter into its members, and prevent the paralysing mental sterility that overtakes many good men who now spend precious plastic years in the dry drudgery of examination details.

Fifthly, compel no student to pass an examination twice in the same subject. At present brain and pocket alike suffer, and the burden could be lightened by a free reciprocity between the examining boards.

EXAMINERS AND THEIR DUTIES.

Men are usually very superior to the system in which they work, and so it is with examiners. After what has been said you may be disappointed not to hear a tirade against them; but I have had a singularly happy experience with my fellow inquisitors, whom I have found, as a rule, among "the mildest-mannered men that ever scuttled ships or cut throats." The two extreme types, the metallic and the molluscoid, illustrate inborn defects of character. The aggressive, harsh nature comes out strongly at the table, and the hard face, with its "what-the-devil-do-you-know" expression, sends a chill to the heart of the candidate, and it reaches his bone marrow when the first question relates, perhaps, to a serious mistake in his paper. Imagine the mental state of a poor chap greeted with, "What did you mean by saying that the ciliary muscle is supplied by the pneumogastric nerve?" And the worst of it is that the metallic examiner may have no sense whatever of his failings, but is rather apt to pride himself on a keen appreciation of his duties. I remember a hard-faced inquisitor who took, so it seemed, the greatest pleasure in torturing his victims—dwelling with fiendish glee on all the small mistakes he could find, criticising the spelling, and ending on one occasion with the cheerful remark, "Mr. Jones, who taught you to write?" That evening, talking about examinations, I said in a joking way: "Judge Jeffreys, you are a heartless brute; I wonder some student has not assaulted you." He took it very much to heart, and I had a long letter about the great responsibility of the position and the rigid sense of duty he felt towards the University and the public. And the facial expression of the fellow examiner is not without importance, whether sympathetic, neutral, or antagonistic. One co-examiner always had a sardonic expression, a sort of Arian grin, plainly saying, "Well, you are a hopeless idiot!" The examination room may have the atmosphere of a cold storage chamber, and a student knows at once the type of man with whom he has to deal.

At the other extremity is the invertebrate examiner, so soft and slushy that he has not the heart to reject a man. It is a variety not often met with in this country, but it exists. Sympathy with the student and a strong feeling for his position may completely overmaster the sense of duty to the university and to the public. A former colleague was made unhappy for days if he had to reject a candidate. For some years I sat on an examination board with an elderly professor, a man of great force of character and ability, who never gave a candidate less than 80 per cent. of the possible marks. In the case of the most hopeless duffers with 20, 30, or 40 per cent. in other subjects he would call out "pass." He was a great grief to me, as well as a mystery. At the last meeting which he attended as an examiner he tossed his book to me with a malicious smile. There were 116 candidates, not one of whom he had rejected, and not one of whom had less than 80 per cent.!

Between the metallic and the molluscoid is the large group of sensible examiners who try to put the candidate at his ease and to find out what he knows in a simple, sympathetic manner. But in any case the examiner is apt to take an unfair advantage of his position, and quite unconsciously. A specialist to whom the facts of his subject have become familiar and ingrained is apt to forget the years that have given the facility and the knowledge; and he may wonder when a man hesitates over an Argyll-Robertson pupil or mistakes a pericardial rub for an aortic insufficiency murmur. The most grievous mistake of the examiner is to regard the candidate as his mental equal and to expect from him knowledge of the same quality as that which he possesses, ignoring his long years of study and the short years into which the student has had to cram the knowledge of a dozen subjects.

Examining is often a heart-breaking task, with little to relieve the monotony of the long-drawn papers. It is distressing to meet with abysmal ignorance of elementary facts, and to realise with sorrow how many more minds are constructed as sieves than as sponges. But there are compensations, and who is there among us who does not appreciate Comte's statement that there were few more delightful experiences than the sweet and softened feeling when a young man's examination was thoroughly satisfactory! But it is much nicer to watch the gradual growth of a student's knowledge and to get it out retail day by day than to drag it out wholesale at set times. One thing is certain—the best we have should be devoted to our duties as examiners. Men should give their whole time to the business when at it. Much-engaged men should not be chosen, and to examine in the evening, after a hard day's work, is to handicap the candidates. We shall no doubt come to a time when professional examiners will be appointed by the General Medical Council to act as associates and assessors to the professors. That it is not a task lightly or inadvisedly undertaken the returns I have given indicate only too clearly. Not that we can lay at the doors of the examiners the responsibility for the lamentable state of affairs to which I have referred. No doubt there are unduly severe examinations, and there are examiners with hearts as hard as pieces of the nether millstone, but these are exceptions.

THE EXAMINEE AND HIS POSITION.

When quoting figures I purposely dealt chiefly with the results of the final examinations, and I am sure the feeling uppermost in your minds was one of sympathy with the hundreds of young men who, after five years of hard work, fail in ordinary tests, and this brings us to a brief consideration of the examinee and his position. In two respects he is an unfortunate victim. Of one I have already spoken—the enormous development in the subjects of the curriculum; and here, I am sure, lies his serious difficulty. It is the case of a quart measure and a pint pot. Intellectual dyspepsia from cramming is at the bottom of his trouble. It is like a diet of hot bread, which a man can stand at first, but, as Lowell says in the "Fable for Critics"—

> By gradual steps he
> Is brought to death's door by a mental dyspepsy.

Another cause of the widespread rejections is defective preliminary education; but let me emphasise the fact that

the percentages of rejections are nowhere higher than among the very best students—e.g., Cambridge men, among whom in some subjects more than 50 per cent. are rejected. I do not deny that much could be done to relieve the present stasis if all medical students began thoroughly trained in physics, chemistry, and biology. In this respect matters are improving year by year. And we should be more honest with the feeble ones, not fitted either by breeding or by pasture to pursue their studies, who should be asked early to withdraw. It is infinitely kinder to stop a man in his career than to allow him to struggle on painfully and submit to the humiliation of half a dozen or more rejections.

The conclusion of the matter is, the student needs more time for quiet study, fewer classes, fewer lectures, and, above all, the incubus of examinations should be lifted from his soul. To replace the Chinese by the Greek spirit would enable him to seek knowledge for itself, without a thought of the end, tested and taught day by day, the pupil and teacher working together on the same lines, only one a little ahead of the other. This is the ideal towards which we should move. The pity of it all is that we should have made an intolerable burden of the study of one of the most attractive of the professions, but the reform is in our own hands and should not be far off. A paragraph in an address of the late Dr. Stokes contains the pith of my remarks: "Let us emancipate the student, and give him time and opportunity for the cultivation of his mind, so that in his pupilage he shall not be a puppet in the hands of others, but rather a self-relying and reflecting being."

An Introductory Address

ON THE

PRESENT PROBLEMS RELATING TO THE ORIGIN OF MODERN RACES.

Delivered at the Opening of the Winter Session in Medicine at the University of Birmingham on Oct. 7th, 1913,

BY ARTHUR KEITH, M.D. ABERD., F.R.C.S. ENG.,

CONSERVATOR OF MUSEUM AND HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

GENTLEMEN,—Less than a month ago the Principal of this University took the members of the British Association a long excursion into space and bade them look on the planet on which they live at such a distance that neither man nor beast was within the limits of sight. Only great structures like the Forth Bridge and the Assuan Dam were visible.[1] To-night I want you to look at the earth a little closer—near enough to see its variegated covering of humanity as its continents revolve under our eyes.

THE WORLD'S CARPET OF HUMANITY.

As the western seaboard of Europe passes by and our own country comes in sight we shall suppose we are near enough to perceive that the human carpet along our Western coast is not quite of the same texture as that which covers the lands sloping down to the North Sea. When Europe itself comes under our gaze the pattern of the human carpet begins to change, and by the time the Far East has risen under the morning sun we shall admit, I think, that the change has become decided. A pall of smoke, the wreckage of a battle-field, the demarcation of new frontiers reveal to us one of the processes at work in modifying the pattern of our carpet. When we turn our eyes southwards and view Africa across the Mediterranean there is at first no marked degree of change—not until the great forest region beyond the Sahara comes in sight. A glance from Northern Europe to Central Africa reveals the extremes in the earth's covering of humanity—not the extremes of material—merely of pattern or design; European and African seem to be products of the same loom. In the southern corner of Africa human contrasts of another kind may catch our eye. We may there see a valiant attempt being made to weave a new human carpet, one in which the European thread of the woof will not intertwine with the African thread of the warp. In this new carpet lie the decaying threads of one of the most remarkable patches to be seen in the widespread covering of humanity—the Bushman and Hottentot tribes.

As Europe and Africa sink out of sight and Asia rolls past under us, we see the human pattern again undergo a change. South of the Himalaya the plains of India are covered by peoples of diverse kinds, in whom we seem to detect a mixture of European and African features. North of the Himalaya a wide part of the earth is covered by men who are quite unlike those already seen elsewhere. The Mongolian type cannot be compounded by mixing other known elements of humanity. South of the Equator—the Asiatic aspect of the hemisphere—in Australia and the islands of the Pacific we may perceive a bewildering mixture of human patterns, varying from the negro type towards the European and also towards the Mongolian. Lastly, the new world unfolds itself. At first sight it seems to present an entirely European complexion. Peering beneath the surface, however, it is easy to see numerous remnants of diverse and ancient races. More than in any part of the earth the web of humanity is being actively woven in the New World. North of Mexico there is a resolute determination to keep the white and black threads separate; from Mexico to Cape Horn nature weaves the human web as she will.

THE PERMANENCY OF HUMAN TYPES.

Having thus followed Sir Oliver Lodge into space and surveyed in a cursory manner the world's carpet of humanity, we shall now return to earth and see what we can ascertain concerning when and how it came to be woven. It is the "when" rather than the "how" which concerns us in the present hour. The belief is still general that it is not many thousand years since the world became populated by the races of modern man. Such a belief is not illogical. When we try to imagine what has happened in the past we must base our speculations on what is taking place under our eyes at the present time. There is a restlessness, a migratory instinct inherent in a considerable proportion of every population. I dare think that in Birmingham there are to be found not only natives of every county of England, but that most of the Welsh, Scotch, and Irish counties are also represented. Birmingham has not only received, it has also given. If it resembles other towns it has sons and daughters throughout the world. The objection will be at once made to this train of reasoning that the migratory tendency alluded to is of recent origin—that it is a result of our modern civilisation. Industrial or individual migration is a new condition, but predatory or collective migration has evidently been in existence as far into the past as history or tradition can take us. Amongst more primitive races of man—and it is they who give us the key to the early state of civilised races—there lurks a deep-rooted tendency to collective migration. When we realise the rapidity with which a people may multiply and the tendency inherent in all human races to migrate, it is conceivable that mankind may have spread from a centre and occupied the whole earth in the space of a few thousand years.

The discoveries which have been made during the last 50 years clearly indicate that the distribution of mankind and their separation into widely different races have not been a rapid but a very slow process. Thanks to the labours of the Archæological Survey of Egypt, to Dr. Reissner, to Professor Elliot Smith, Dr. Wood-Jones and Dr. Derry, we know something of the people who occupied the Lower Nile Valley during the last 8000 years. At every phase of that long period there was found evidence of the arrival of new types—of migrations or invasions of Egypt—but there was also clear evidence of the survival of the old types. There was evidence of mixture, but the final conclusion to be drawn from a study of the ancient inhabitants of the Nile Valley is that the passage of 8000 years left the prevailing human types modified to only a slight degree. Recently Dr. Seligmann has shown that certain native tribes near Suakin on the Red Sea have features and bodies very similar to the predynastic Egyptians. The explorations of Mr. Henry S. Wellcome in ancient cemeteries of the Soudan have demonstrated that the peculiar, tall, slender, long-limbed negro tribes which now occupy the upper waters of the Nile were there at least 2000 years ago. The lesson that Egypt has to teach us is that human types are not easily changed. The explanation which is usually given—and I am prepared to

[1] THE LANCET, Sept. 13th, 1913, p. 785.

accept it—is that the conditions of life along the Nile Valley have remained unchanged during recent millenniums, thus ensuring the permanency of the human type.

When we turn to America we find further evidence of the permanence of human types. In recent years Dr. Ales Hrdlicka, of the Bureau of American Anthropology, has written two excellent memoirs on the remains of ancient human skeletons which have been discovered in the New World. Of those discoveries I propose only to cite one—the human skeleton discovered at Lansing, in the State of Kansas, 11 years ago, in a glacial deposit at a depth of 23 feet. Dr. Frederick Wright, who has given a lifetime to the study of glacial deposits in North America, and especially to the antiquity of man in that country, regards the deposit under which the skeleton was found as formed before the last cycle of glaciation, and gives its probable antiquity as about 12,000 years. If the European cycles of glaciation were contemporaneous with those of North America, then the antiquity, if I may infer from the estimates given by our own geologists, is very much greater than has been calculated by Dr. Frederick Wright. No one has ever called in question, no one can call in question, the authenticity of the age of the Lansing skeleton. Dr. Hrdlicka, however, rejects it as representative of ancient man in America on the ground that "this man was physically identical with the Indian of the present time, and that his physical characteristics during all the thousands of years assumed to have passed have undergone no important modification." We see from that statement that Dr. Hrdlicka is under the belief, one which is widely held at the present time, that human types are so liable to variation that it is impossible for them to breed true over a long space of time. We must accept facts as we find them and suit our beliefs to fit our observations. The plain lesson of the Lansing find is that before the last great glacial cycle there existed a type of man in the central States almost identical with the modern Indian of the same region.

THE EARLY PEOPLE OF ENGLAND.

When we come to study the history of our own countrymen we reach a similar conclusion. Our archæologists are opening up Anglo-Saxon cemeteries of the fifth and sixth centuries and revealing to us the physical characters of the people who gave us their language and their blood. Their teeth were better than ours, their limb bones are usually rather different in conformation, but the counterparts of those people are to be seen on every hand at the present day. Every year we come to know more of the people who inhabited Britain in the Roman period; they are the same kind of people as ourselves; their heads showed the same variety of forms as may be seen in Birmingham to-day. When we go further back, to the time before iron was used and weapons were made of bronze—to a date which takes us some 2000 years before the birth of Christ, we find human types with which we are still familiar. Those handsome men with high, rounded heads, whom we now know as squires and men in posts of authority, first appear in our country at this date. They were originally natives of Central and Eastern Europe; they were not a new type of man—only new to England. When we go further back and explore those mounds or barrows which contain the men who lived in England in the Neolithic period we do not find new types; the men of that time, except as concerns the state of their teeth and shape of their limb bones, were at one with us. Five thousand years ago the men of England were of our stature, had the form of head and the strength of muscle which has been given to many of us.

When we pass beyond the Neolithic period to reach the time when only stone implements of the more ancient or palæolithic type were used, we were supposed, until a few years ago, to come to a blank or hiatus in our knowledge. That blank is in the process of disappearing. Recently Mr. Reginald Smith, of the British Museum, has recognised that the flint implements which were left by the men who dug those peculiar pits at Cissbury and in other parts of England were not early neolithic people as is usually supposed, but were in reality palæolithic folk. Now we know some of the skeletons of these early Englishmen; they were men exactly of the common British type. Lately I had an opportunity of examining two discoveries of human remains from Kent which were so similar that they might have been almost members of the same family, yet we are fairly certain that they belong to very widely separated periods. The remains of one set of people were discovered at the base of an ancient stone monument at Coldrum, in Kent, within the valley of the Medway, by Mr. F. J. Bennett, F.G.S. Only worked flints of a neolithic type were found during the excavations; we may, therefore, presume that the people who were buried in the ancient tomb at Coldrum were Kentish people of the Neolithic period. The more ancient skeleton was discovered a short distance from Coldrum, near the little town of Halling, situated on the Medway, a few miles above Rochester. At Halling the Medway is flanked by a terrace of brick-earth, laid down at some previous period, when the Medway flowed a number of feet above its present level. This terrace had to be cut through when a new sewage system was being constructed for Halling. The terrace was seen to be made up of a number of superimposed strata or layers, each layer or stratum being of different composition, and therefore marking a separate period in the action of the river. Beneath the fourth layer, counting from the surface, were found charcoal, charred stones, and remains of hearths, with worked flints which belong, not to the neolithic, but to the palæolithic type. They are similar to those found in the floor-strata of French caves, and are of the type assigned to that palæolithic phase of culture known as Aurignacian. The upper four layers had thus been deposited over an old habitation of the men who lived before the close of the Palæolithic period—who actually were in Kent towards the close of the last cycle of the Glacial period. In the fifth stratum, at a depth of almost 6 feet from the surface, was found a human skeleton, which has been preserved and investigated by Mr. W. H. Cook and Dr. Spencer Edwards. To me it is clear, from the flexed posture of the skeleton, that they were dealing with a burial, but not one made by modern men from the present land surface, but one made from the ancient land surface by the palæolithic men who lived before the last four layers of the terrace had been deposited. A full investigation of the skeleton showed that the palæolithic man of Halling was very near akin to the neolithic people of Coldrum, and yet the years which elapsed between the periods at which the one and the other lived must be counted in thousands. A few miles north of Halling, in the valley of the Thames, is Tilbury. When the docks were excavated an old land surface was reached at a depth of 32 feet; two feet below this old land surface was found the skeleton of the Tilbury man. He belongs to that form of ancient Briton to which Huxley gave the name of "river-bed" type; he is first cousin to the men who have long lived on the shores of the Mediterranean and which Sergi has distinguished as the Mediterranean race. The remains found at Halling and at Coldrum may also be assigned to the river-bed type. This type was not confined to the south-eastern part of England. From the old forest land now submerged along the western and southern coasts of England human skulls of this type have been recovered. The skull found in the Cheddar caves and described by Mr. Davies as belonging to the closing phase of palæolithic culture is of the same class. Some 60 years ago, when a cutting was made for a new railway near Mickelton in Gloucestershire, a skull of this type was found at a depth of 10 feet, beneath peat and undisturbed blue clay—certain indications of a great antiquity. A few years ago the Rev. E. H. Mullins explored a small limestone cave which lies in a narrow valley behind his rectory at Langwith Bassett in Derbyshire. In the cave he found numerous remains of animals—many of them now extinct—and clearly belonging to the geological period preceding the present—the Pleistocene period. He found worked flints and a human skull. The skull was of the river-bed type, but its condition was so fresh that at first I was inclined to think some mistake had been made. Mr. Mullins, however, showed me that the condition of preservation of the skull was exactly the same as that of the bones of the extinct animals. It is probable that the Langwith cave skull is of the same age as the Halling skeleton; both appear to belong to that period of palæolithic culture—the Aurignacian. How long ago it is since the Aurignacian period closed we have as yet no accurate means of judging, but those who have studied the changes which have occurred in our valleys and in our fauna suppose that we must make a liberal allowance of time—30,000 years or perhaps more.

THE ANTIQUITY OF MAN.

We have thus surveyed the history of the men of three parts of the earth over a considerable period of time. In all three places the result has been the same—we see the same persistence of type in Egypt, in America, and in England. In this hall to-night there are representatives of the men of the Derbyshire cave and of the Halling terrace; in America the Red Indian preserves the form of men who lived before the last glacial invasion of North America; the predynastic Egyptian survives in the tribes on the shores of the Red Sea. We may, therefore, suppose that if inquiry were made in China, in India, or in Central Africa the result would be the same—that in Central Africa we could follow the Negro type well back into the Pleistocene period; in China the Mongolian type, and in India the Dravidian. It is when we come to realise the persistency of human types that we see that we must allow a very long period indeed to cover the time needed—not for the population of the world, but for the differentiation of modern man into the well-marked races with which we are all familiar. The characters which separate the European, the Chinamen, the negro impress every one of us; we cannot overlook them. Yet when we come to examine those races structurally we must admit that they are so much alike that we must suppose, to account for their community of structure, that all three have come from a common stock.

The question we have to face in solving the problem of the antiquity of the modern races of man is, How long will it take for the separation of an African, an Asiatic, or a European, from a common stock? It is evident, from what we have discovered concerning the fixity of human types, that it will take a long period—infinitely longer than most modern geologists will allow.

When we approach the problem of the antiquity of man from the side I have tried to present to you, we obtain some assurance that the human beings who represent the common stock from which all our modern races have diverged could not be of a very low type. When we come to study the features which characterise the brains of the various human races—so far as these differences may be detected with the naked eye—we see that they relate to structural details. In their main features they are alike. It is true that a skilled anatomist will, if you show him a representative specimen, distinguish the brain of a negro from that of a European or from that of a Chinaman; I do not think, however, he could tell with any degree of certainty the brain of the Chinaman from that of the European. Seeing that the brains of all modern varieties of men are so much alike in the essential features of their architecture, it is a legitimate inference, I think, that a large and moderately complex brain is a common inheritance of modern races—that in the common stock from which all modern races have arisen a fairly large human brain must have been already present. We, therefore, ought to find even before the differentiation of the present races of mankind that there were human beings in existence with large brain already.

I am now to lead you on to another aspect of this problem which is hotly contested at the present time. In tracing backwards the ancient inhabitants of England, I left off with the remains which are assignable to the later part of the Pleistocene period. I now propose to advance well into that period. In the valley of the Thames there still persist, in the form of a gravel terrace, remnants of an ancient bed of the Thames. It is known as the 100-foot terrace because it is situated about that distance above the level of the Thames. About the geological age of that terrace, at least its deeper strata, there is no dispute; it belongs to the earlier half of the Pleistocene period. Now it was in that terrace, at a depth of 8 feet, in strata which contained worked flints belonging to an earlier form of palæolithic culture, and with remains of pleistocene mammals, that the Galley Hill skeleton was discovered. The remains are those of a man of our type. It would not be easy to find his match in our present population; I doubt if anything approaching a counterpart to him could be found, but he could appear in a modern company without his features calling forth any special remark. The remains were discovered in 1888. Some years before a fragment of a human skull was unearthed in a deposit of brick earth near Bury St. Edmunds at a depth of 7 feet. With it were found mammoth tusks and implements of the Acheulean type—a culture which belongs to Middle Pleistocene time. It is only a fragment, but there is sufficient of it to make us certain that the original skull of which it formed part was shaped as in modern human races. Two years ago Mr. J. Reid Moir, of Ipswich, discovered a human skeleton beneath an undisturbed layer of chalky boulder clay 3½ feet in thickness. The skeleton lay in the flexed posture, and probably represented a burial, but it was one made before the chalky boulder clay was laid down. That is a deposit following the great glaciation. The skull and skeleton have the features of modern races, all except the tibia—that was shaped differently to any human tibia I have yet seen. The Ipswich skeleton represents a man of the modern type. Thus, in my belief and in that of many competent men, we have discovered in England representatives of modern man in existence in England, even before the middle of the Pleistocene period.

By Professor Boyd Dawkins and Dr. Smith Woodward such discoveries are regarded as impossible; with Dr. Hrdlicka they think that a human type could not persist from the Mid-Pleistocene to the present day unchanged. In their opinion all the human remains just mentioned represent Neolithic burials. Our Neolithic ancestors took the trouble to dig a grave 8 feet deep in the 100-foot terrace, and laid the strata down again so carefully that we cannot now detect their forgery. The Neolithic men of Bury St. Edmunds laid a fragment of a dead man's skull 6 feet deep in brick-earth with mammoth tusks and Acheulean implements to delude a simple set of men in the twentieth century into believing that mankind of our type was ancient!

NEANDERTHAL MAN AND THE PILTDOWN SKULL.

Another obstacle to the belief in the antiquity of our own type of mankind has been removed in recent years. I may describe it as the Neanderthal bogey. A certain school of geologists became obsessed with the belief that it was impossible for any species of mammal to come through a long geological period unchanged, and inferred that man could not escape so universal a law. The discovery of that extraordinary type of mankind over half a century ago—the type which is now known as Neanderthal—confirmed this belief. To a superficial eye Neanderthal man was just the individual wanted to represent our stage in evolution during the Pleistocene period. He had many simian features which we do not possess. We have come to realise now that he had also many high specialisations, and that he cannot stand in the direct line of our ancestry. We know him now as a being quite distinct from all modern races; the difference between him and us is much greater than between a European and a negro; he represents a totally different form of human being. We now know his culture and his period. We have followed modern man right up to the threshold of the period at which he lived; it is also clear that he died out in front of modern man in the same way as the Tasmanian disappeared before the European. Neanderthal man does not represent our Pleistocene ancestor. Where, then, is our pleistocene ancestor if not at Galley Hill, at Ipswich, and at Bury St. Edmunds? These remains were found in older deposits than those which contain the remains of Neanderthal man. In Italy it is the same as in England; human remains of our type have been found, but they have been rejected because they were not of the Neanderthal type.

The remarkable skull which was found at Piltdown by Mr. Charles Dawson and which has been described by Dr. Smith Woodward, is destined to throw a new light on the problem of man's antiquity. It was found in a very shallow deposit, little more than three feet below the surface of the ground. If it had so happened that this skull presented modern characters, what would have been said of it? I am certain that Professor Boyd Dawkins, Dr. Smith Woodward, and Dr. Hrdlicka would have regarded it as a recent burial. If its high degree of fossilisation had been brought to their notice they would have replied that fossilisation was a most uncertain indication of antiquity; they would have cited bones from neolithic burials which show mineralisation to an equally great degree. If it was pointed out to them that the remains found with the skull were those of extinct animals belonging to the Pleistocene period they would have replied that a recent burial may be made in a Pleistocene stratum and bones of different ages thus mingled. I draw your attention to those aspects of the case of the ancestor of

modern man—he is sentenced before his trial begins. In the case of the Piltdown skull, characters are present which mark its ancient date. No modern man has such a chin or lower jaw; and if Dr. Smith Woodward is right in assigning the canine tooth found at Piltdown to this jaw no human being has been seen with such a simian canine tooth. In many features the Piltdown man foreshadows our type. Does he, then, represent our ancestors near the beginning of the Pleistocene period, admitting for the sake of argument that the Piltdown man is Pleistocene and not Pliocene in date?

The opinion I have formed is that he does not lie in the direct line of our ancestry. I base my opinion on the fact that we know of the remains of two different species or genera of mankind in Europe at the beginning of the Pleistocene period—one is the Heidelberg man, the other is the Piltdown. The Heidelberg man was certainly of the Neanderthal type, the Piltdown man is much more of our own type. They are clearly products of a common stock. We must presume, from what we know of man's nearer relatives—the anthropoid apes—that the common ancestor of Piltdown and Heidelberg man possessed the ledge-like overhanging eyebrow ridges which characterise the anthropoid forehead. These ridges have disappeared in the forehead of the Piltdown man; they have been retained by Neanderthal man. On the other hand, in the Heidelberg jaw the region of the chin already shows human modifications; the Piltdown man retained the simian form. There is, if we may use Mendel's law for this purpose, apparently at least one intermediate descendant of the common Piltdown-Heidelberg ancestor missing—one which shows the human modification of the chin and the disappearance of the ledge-like supra-orbital ridge. That missing form would serve well as our ancestor. We must, then, not dismiss as neolithic burials those human remains which have neither simian eyebrow ridges nor simian chins. I still maintain, as I did before the discovery of the Piltdown skull was made, that the Pliocene ancestor of modern man was one probably as highly evolved as the aboriginal man of Australia.

An Introductory Address
ON
THE PROBLEMS OF UNIVERSITY MEDICAL EDUCATION IN LONDON.

Being the Annual Report of Charing Cross Hospital Medical College presented at the Opening of the Winter Session on Oct. 1st, 1913,

BY W. HUNTER, M.D. EDIN., F.R.C.P. LOND.,
DEAN OF THE COLLEGE.

[Dr. Hunter in the first part of his report briefly reviewed the results of two years' experience of concentration of the earlier medical studies, as adopted two years ago, by transferring its students for this purpose to the University of London, King's College Laboratories, immediately adjacent to the school. The result has been a marked increase in students from a total of 109 in the school in the year 1910–11 to an average of 150 during the past two years. The school is now practically entirely medical, the dental students for the most part having passed to the two or three schools in London which are especially interested in dental education, increasing their prosperity, while this loss to Charing Cross Hospital Medical College has been compensated by a still larger increase in the number of medical students. Of these nearly one half of the full-time students are now, moreover, studying for the degree of the University of London. The preliminary science laboratories of the hospital, freed by the concentration plan, have been devoted to the bacteriological and public health departments of King's College, and the school is enabled to make a grant of £250 a year out of the rent received therefor to the university laboratories. As to the disadvantages attaching to the concentration method, Dr. Hunter knew of none; even the fears of its interference with the social life of the hospital and school have proved groundless, for the interest in the Students' Union and its many spheres of activity and in athletics has never in the history of the school been more active and intense. The result has justified the opinion expressed by Dr. Hunter in his last annual report, when speaking of these changes as constituting an experiment in connexion with university medical education, that the new policy meant not "the breaking up of the school, but the making up of the school." Dr. Hunter, in the second part of his report, went on to deal with the Problems of University Medical Education in London.]

THE UNIVERSITY OF LONDON AND THE SCHOOL HOSPITALS.

Medical Education has been a welcome guest and has had a free run in all the school hospitals from the very first. This is in striking contrast to the experience of medical teachers elsewhere—e.g., in Berlin, the capital of Germany, where all the hospitals refused to allow students to make use of them, and early in its career (25–30 years ago) the Government was in consequence compelled to build the great Charité Hospital of Berlin—at first for its own war purposes and now maintained for University purposes. Still more in America up to the present time, where the greatest difficulties are put in the way of medical schools by the governors of hospitals refusing or limiting their permission for students to attend. In return for their free use by the University, the hospital governors in London have never asked or received any material or other recognition from the University.

This freedom of the hospitals throughout the whole history of English medicine forms the basis of the chief English clinical traditions of medical education.

[Dr. Hunter here quoted several passages from the evidence of Mr. Abraham Flexner before the Royal Commission showing that the clinical training is immensely better in England than in any ordinary school in America, and that in some respects conditions are distinctly more favourable to the student than they are in Germany, concluding with the observation that there seemed to be nothing here materially wrong with English methods, and particularly with the relation of hospitals to medical education.]

THE GREAT TASK OF THE LONDON SCHOOLS IN MEDICAL EDUCATION.

How great the task of London medical education has been, and still is, is shown by figures and statistics which I placed before the Royal Commission. The medical schools of London, up to as recently as 20 years ago, were responsible for the entire medical education of no fewer than 70 per cent. of the total students of England and for the part-time education of another 10–20 per cent.—of no less than 80–90 per cent. of the students in England, this number constituting no less than 42 per cent. of the entire students of England and Scotland. Despite the formation of seven provincial Universities during the past 10–15 years, it still has to educate, in whole or in part, over 70 per cent. of the total students in England and over 40 per cent. of the total students of England and Scotland. The medical schools of London have thus discharged in the past, and still continue to discharge, a big task for English medical education, and they have done this under great and increasing difficulties without endowment and without the slightest pecuniary support from the university whose students they educate. What, then, is the chief problem presented by university medical education in London? It is represented to be the hospitals of London—their number, their intense interest in education, their multiple energies, the difficulty of reconciling their existence and their energies with the grafting on to them of another system of education and hospital control necessary, it is alleged, for the establishment of an ideal system of university medical education.

[Dr. Hunter again quoted Mr. Flexner's evidence as showing the defects of the British system from the educationist's point of view—viz., the need for the University to have complete control of its own hospital, to make England a contributing factor of the progress of medicine. Clinical teaching had failed to keep pace with laboratory improvements in medicine, and such productivity as had occurred had been in spite of the system. What was needed was greater prominence for the educational aspect of the training. London hospitals were disorganised as a whole and individually. A reorganised faculty would soon reorganise the wards.]

Here, then, the picture of English medical education as it is drawn by a distinguished American educationist (not a doctor) is sharply outlined. If the shadows are too deep in places and wrongly placed his object is the highly laudable one, beneficial to education, of directing attention to the existence of the picture at all—not necessarily to its completeness or absolute technical accuracy.

The problems facing University medical education in London, as here presented, are thus the following formidable ones: 1. To create, in the first place, a university which will be concerned and *financially able* to give any education at all to its students in their final hospital and school studies. For this the University of London has, so far, never done. 2. To create a *new Senate*, limited in number to 10 or 15 men, with the fullest financial, administrative, and executive control over the whole affairs of the University. 3. To create a new *Faculty of Medicine*—small, compact, and sufficiently business-like in its methods to be able to draw up a scheme, enter on negotiations with one or more hospitals, and induce them to hand their hospital over to them for university purposes. 4. As regards the hospital governors, the problem placed before them by the newly organised senate will be to allow this university faculty to modify their entire existing arrangements in some radical manner to suit university requirements—in short, to control the hospital; while the hospital managers continue, as before, to raise all the money necessary to keep the hospital going. 5. There is a further problem—most clearly presented by Sir William Osler in his evidence before the Commission. He was asked: "Supposing the hospital governors refuse to hand their hospital and its control over in the way suggested, what influence of a compulsory character could you bring to bear upon them?" and the reply was: "I do not know, Sir."

NATIONAL CHARACTERISTICS IN MEDICAL SCIENCE.

National characteristics play an important part in medical science as they do in all other spheres of human activity. They have played an all-important part in the development of English medical education and medical observation. In the case of English medicine, that characteristic has been *individualism*—shown in connexion with the foundation alike of hospitals and schools, and no less manifested by the individual philanthropy which originally created and still underlies and supports the English hospital system. In the case of Germany the national characteristic has, on the contrary, been essentially governmental and bureaucratic, all hospitals and medical faculties being supplied and maintained by combined State and municipal aid. In America there has been exhibited individualism—rampant to a degree quite unknown in the history of any country—condoned, connived at, and even legalised by a degree of recognition and support on the part of individual States and municipalities totally unknown in the history of medicine in this or in any other country.

MEDICAL EDUCATION IN AMERICA.

No greater service has ever been rendered to American medicine than the full, clear, and remarkable exposure recently (1910) given by Mr. Abraham Flexner of the proprietary nature of scores of the medical colleges, "institutes," quasi-universities, "national medical universities," "colleges of physicians and surgeons," &c., which for many years have given their M.D. in a frankly commercial spirit.

[Dr. Hunter here referred to the case of the "National Medical University," which according to Mr. Flexner, had "no equipment of any sort, and a dirty, unused, and almost inaccessible room as its dissecting room; and its 'hospital' consists of a top floor containing two lonely patients,'" yet it enjoyed from students' fees an (estimated) annual income of £4500.]

The evil of medical education in America—namely, individualism and individual "schools" and "colleges" run rampant—has been signally checked, and is in process of being in due course effectively arrested by a still greater individualism originally created by the munificent foresight of one philanthropist, Johns Hopkins, and given effect to by the brilliant imagination and practical genius of a young pathologist, Professor Welch, to whom at the early age of 28 was entrusted the unique task of formulating the conditions and selecting the professors for the first Faculty of Medicine to govern the new "Johns Hopkins Hospital and University" of Baltimore. His first selection was a young Canadian physician professor, educated in the McGill University of Montreal and in London in the best clinical traditions of English medicine, transferred to the University of Pennsylvania in Philadelphia, thence transferred to the Johns Hopkins University in Baltimore, and finally finding his present home in the ancient University of Oxford—Sir William Osler.

I have recently elsewhere, in the opening address of the McGill University, Montreal, in 1910, paid my tribute to the influence of these two great teachers on the science of medical education. "Under their inspiring spirit and guiding hand supported by their enthusiastic colleagues and pupils, Anglo-Saxon medicine on the American-Canadian continent has shown itself capable of combining in a degree unknown to English medicine the scientific spirit underlying German work and methods with the great clinical practical outlook which throughout its whole history has specially characterised English medicine." That tribute paid three years ago, without any reference to the problem of medical education in London, has an interesting significance at the present time. For it practically embodies the *Leit-Motif*—the note of "Fate and Gloomy Sorrow" which runs through the whole of the evidence of the Royal Commission on the University of London with regard to medical education—the *motif* which has eventually determined their final recommendations. That *motif* is the excellence of English clinical traditions in hospital work; but the extraordinary defectiveness, insufficiency, inadequacy, absence of organised support, whether from Governmental and public services, or by public opinion, or by private generosity, for the provision for laboratory work and research necessary for the promotion of medical education or the advancement of medical knowledge.

What, then, was the antidote which these pioneer workers introduced into medical education in the United States as they found it in the "eighties," where it still exists—to a degree quite unknown in English medicine. It was the following: that Sir William Osler introduced the clinical traditions of clinical teaching—by the system of clerks and dressers in the wards and continuous relations with and observation of patients; while Professor Welch grafted on to that system the all-essential, supporting, educational, and progressive system of great laboratory institutes created on the lines of German methods and example. This was possible in their case, for they had a clean slate to write upon—a free hand both as regarded money for their hospital and school and as regarded the organisation which they saw fit to adopt.

THE ROYAL COMMISSION'S PROPOSALS.

The proposals now submitted in evidence before the Royal Commission on University Medical Education in London and ultimately adopted and recommended by the Commission are shortly—that similar organisation is necessary to create the proper conditions for placing hospital education in London on a university basis.

Inasmuch as the chief basis of the English system is the clinical traditions of hospital education—the system of clerks and dressers and facilities for hospital work and assistance always freely granted by hospital authorities in this country is admitted by all to be immensely superior to the system obtaining in any other country—it might be thought to be perfectly easy and practicable to graft on to this system for university purposes the laboratories, professors, and assistants necessary to supplement and complete the system. I think myself that that is perfectly practicable, and the matter, having now been referred to a strong Departmental Committee of the Board of Education to draft a Bill to carry this into effect, so far as this portion of university education is concerned, I am quite prepared in common with everyone interested in placing university education on a sound basis in London, to afford them every help in my power. The character of the Departmental Committee is, to my mind, a sufficient guarantee that the distinctive national characteristics and honourable traditions of English medicine (which have been far more fruitful in advancing medical knowledge than some of the sweeping generalisations submitted by witnesses before the Commission realise) will have due weight attached to them.

Still more I am satisfied that the widely different conditions of hospital management and support peculiar to this

country and quite unknown to Germany and institutions like the Johns Hopkins Hospital and a few American hospitals—to wit, the voluntary public charitable support and government of the hospitals in this country as contrasted with the State, municipal, bureaucratic control of the German, and the endowed support and control of the newer American hospitals and universities, like the Johns Hopkins—will be better known to, and more fully weighed by, that committee than they could possibly be known to, or weighed by, witnesses unacquainted by practical experience with their working.

To pour new wine into old bottles is proverbially a risky business—which it is said no wise man would attempt to do. To pour a German full-bodied wine compounded of full control of the Minister of Education, Exchequer control in connexion with insurance money, municipal control, and autocratic directing control of two or three professors over the whole of a hospital and of all the laboratories connected therewith, would certainly burst the old bottles (quite decent and useful ones) of the entire voluntary system of hospital support and government existing in this country.

The problem is one of the greatest difficulty. So far from subjecting the Commission's Report to criticism, with regard to the individual recommendations, my own opinion is, after the closest perusal of the whole volumes of evidence submitted, that a satisfactory solution of the whole problem of University Reform in London, including that of Medical Education, is to be found in connexion with its fundamental recommendations, in my judgment admirable in character. These are:—(1) Government of the University Court; (2) its Finance Administration and Executive control by a compact and limited Senate of 17 business men (instead of an unworkable Senate of nearly 100 men representing independent and, in many cases, opposing interests); (3) the creation of a small compact Faculty of Medicine, not merely advisory, but made responsible for the Educational arrangements and provisions subject only to the control of the Senate so far as their Regulations affect the finances of the University.

FINANCIAL NEEDS OF MEDICAL EDUCATION.

The needs of a school are determined by the requirements of full-time students, who are engaged in work in the school and hospital all day. Part-time students, who come for shorter periods of time, share in the arrangements thus provided to their own great advantage, and contribute to the support of the school. 1. To place medical education on a sound basis the fees thus earned, plus any educational grants given by the Board of Education, should be entirely available for the education of the students and for payment of lecturers and demonstrators. On the basis of what is being done in German universities and a few of the schools in America, to which so much attention has been drawn as examples of what the standard of university education should be, these ought to constitute about one-third of the total annual cost of a student's medical education. 2. But this alone is quite inadequate. In addition there is required money for the provision, equipment, and support of the laboratories required for instruction and for payment of the salaries of the professors in charge of the various departments. The amount required for this is about the same as that earned in fees. 3. And, lastly, over and above these requirements there should be a third quotient connected with medical education, available for the promotion of research in the various departments.

ANNUAL EXPENDITURE PER STUDENT.

I estimate, on the basis of practical experience, that the current annual expenditure for university medical education in London should work out to at least £70 to £80 a year per degree student, or approximately £80,000 to £100,000 a year. No provision approaching this is available in any of the medical schools of London. It means that two-thirds of the cost of education must come from sources other than fees. Owing to the absence of any adequate support from the State, university, or municipal or any public sources, no such funds are available.

The requirements here stated may seem to be large and costly even for a rich country like England. Nevertheless, they fall below the actual expenditure on medical education in the universities of Germany. According to official figures supplied by the German Government, the actual expenditure in 10 universities in Germany amounts to no less than £95 per student, and a total sum of over £500,000 per annum.

COMPARISON BETWEEN A GERMAN AND A LONDON SCHOOL.

[Dr. Hunter then compared the expenditure at the University of Königsberg (370 medical students) with one of the largest London schools (353 full-time and 170 part-time students). The German expenditure was £34,000, or £92 per student annually; the English £14,000, or £40 per student. The State in Germany contributed £23,500, or £63 per student; the Board of Education in England £4600, or £13 per student. Further, the German University contributed £29; there was no university contribution in England. The departmental expenditure in the German university was £24,500, of which £14,000 were for clinical salaries, teaching, and work; in the English school £6000, of which only £1500 were available for clinical teaching.]

There is not much comforting in this contrast either to the English Government or English public opinion. In my opinion the financial conditions of medical education in this country are a discredit to all parties concerned, except only the medical schools and their devoted band of teachers who support the whole cause of medical education in London on behalf of 70 per cent. of the total students of England, under greatest difficulties, without financial support, without recognition, and without even sympathy.

If I might venture to make any criticism on the Final Report of the Royal Commission it would be that this financial aspect of medical education in London has not been brought out in connexion with the comparisons of a startling and invidious character between English medical education and German medical education to which so much weight has been attached. The prosperity of university medical education in London would be enormously promoted by providing three to nine professors in certain selected schools of London, each of them with £4000 at its disposal for the development of medical and surgical science and teaching in the University, as proposed by the Royal Commission. The total sum of £36,000 a year thus provided for salaries and working expenses would not, however, solve the problem which it is sought to solve—salaries to full-time professors and their assistants, and the providing and maintaining and paying adequate scientific and final laboratories connected with the schools selected. It is little more than that referred to in the expenditure on one moderate-sized German university. And this is apart from any capital outlay necessary for the provision of new laboratories.

[Dr. Hunter next compared the annual current expenses of 10 medical schools in London with 1122 full-time and 765 part-time students, with those of the Medical Faculty of the University of Berlin with Charité Hospital (2000 students), and the respective State grants in each case, showing the grant to be about £12 per full-time student in London as against £49 in Berlin.]

THE BOARD OF EDUCATION AND THE MEDICAL SCHOOLS.

Small as this grant is relatively, it has been of the most material help to every school which has been in receipt of it. In the case of the Charing Cross School, as I can testify from personal experience, it has made all the difference in the world in enabling it to carry out the reorganisation which has had such encouraging results in relation alike to the University, to King's College, and to the school. The increase of efficiency, equipment, laboratory accommodation, facilities for teaching and research which it has helped to bring about for the benefit of 250 students of the school and the University laboratories who have had the advantage of them during the past year has been very great. Apart from the amount of the grant itself, and the increased efficiency thereby produced, it has given the school great encouragement to know that for the first time in their history a great public department of the State is interested in their work for medical education and the provision made for carrying it out effectively.

It is only some four or five years since the Board first began to make their grants. The information which they have yearly before them, and which they so carefully analyse and report, has been of the greatest service to the cause of medical education and its university reform—the facts brought out have given the greatest stimulus to better efficiency which the medical schools in their history have ever received.

Presidential Address

ON THE

RELATION OF MEDICAL KNOWLEDGE TO WAR CONDITIONS.

Delivered before the United Services Medical Society at the Royal Army Medical College, Millbank, on Oct. 9th, 1913,

BY COLONEL BRUCE M. SKINNER, M.V.O.,
COMMANDANT OF THE COLLEGE.

GENTLEMEN,—I have to express my thanks to the society for the honour they have done me by placing me in the chair as their president for the current year. The diffidence one feels on taking up such a position inspires the resolve to do one's best to prosecute the valuable work of this society. Very valuable work it is—perhaps especially valuable to us in London. Here the subject-matter of our debates is usually the practical application of our services on the Flood and in the Field. This gives an opportunity to all of us who are engaged in the very serious pursuits connoted under the general term "medical" to discuss the methods of bringing our technical knowledge to the aid of the sailor and the soldier under war conditions. Many of us have no opportunity of seeing war or even its peaceful presentment at manœuvres; for this reason I submit that our discussions are specially valuable to those who live in London. Our branches are in closer touch perhaps with the practical aspects of the Royal Navy and the Army, and can see actually many of the various phases of what is called the military medical problem. Those who have but occasional personal experience gain by these discussions a view of the actual performances in war; they hear the difficulties of applying principles to varying situations, and learn thereby the value of that initiative which enables a man to adapt himself and his appliances to varying exigencies. Like the student of medicine the army doctor learns the principles laid down in his text-books—i.e., regulations and training manuals; he becomes educated. His education is incomplete unless he has trained his mind to apply and adapt broad principles to suit circumstances which vary from the normal.

Reading through the Proceedings of this society I have been much struck by the way in which they afford illustrations of the varying conditions of war, of the different circumstances which any one of us may have to meet; they offer solutions of problems which cannot fail to have their value when we may be placed in a position demanding prompt action; they contain suggestions which may lead to advances in organisation and arrangements, advances demanded by the progress of thought. Here a little and there a little, one may pick out methods or means of overcoming what would be grave difficulties to inexperienced men who have lived in their shells and not polished their wits by conference and discussion with their fellows. The problems of life are not set upon an undeviating line of railway; the problems of war are as varied as the problems of civil life.

THE MEDICAL SITUATION OF THE BATTLE OF SPICHEREN.

I submit, therefore, that we are fulfilling a rôle which will prove useful to all commissioned medical officers, and would express a hope that naval and military medical problems may still engage a large portion of our time and thoughts. And in this connexion I would like to quote a passage from the German official account of the battle of Spicheren describing the situation at Spicheren on August 6th, 1870:—

> At the commencement of the action the whole of the battalions of the foremost brigade (v. François) were employed in attacking, as simultaneously as circumstances would allow, the front and the flanks of the adversary's position. As it then became apparent that these forces were insufficient for the purpose, all reinforcements had to be drawn from the brigade (v. Woyna) which followed. The arrival of the latter at various points of the line of battle mixed the brigades and rendered the exercise of command very difficult, especially on the right wing, where the battalions of different regiments had already become intermingled.

These brigades were of the 14th Division of the VIIth Army Corps. This was comparatively early in the fight. If you will pursue the sequence of events you will find the IIIrd and VIIIth Army Corps coming up and mingling with the VIIth as their units or companies arrived, and you will see portions of the 5th, 13th, 14th, and 16th infantry divisions commingled, and a casualty list of 4871 Prussian officers and men, to say nothing of the wounded left behind by the French, scattered across a front of some 3 miles, with a depth of roughly 1½ miles, in forests and ravines and upon mountain slopes. You will observe also that the whole German Army had on its approach to the battlefield only two bridges at Saarbrucken, and you can picture to yourselves the position as regards the rearward evacuation of the wounded.

When perusing this account again very recently this passage, taken in conjunction with the preceding detail, struck me as offering food for thought, more particularly, perhaps, to the battalion medical officer, and I determined that on this present occasion I would suggest that one of our members might undertake to give us a paper descriptive of the fight and of the field medical requirements. We should then have a picture of a series of real tactical positions resembling those which some of us might experience in the future, detailed as to time and space, which important factors are often lost sight of in academic exercises, while the medical problem might be approached as if the battle occurred to-day with our modern organisation, embracing the Territorial Forces and the voluntary aid afforded by the Central British Red Cross, working through the various situations confronting the battalion medical officer up to those with which the officers of administrative rank would have to deal. I have prepared a map of the positions at the height of the battle in the hope that it may help to attract someone's interest sufficiently to induce him to give us a paper.

TACTICAL AND SANITARY PROBLEMS.

We owe much of our success to the officers of the Territorial Force who have made us familiar with the problems with which they have been faced, and I hope they will continue to widen our knowledge by their papers, which possess the immense value of showing us how closely we are associated in our spheres of work. Also, it is hoped that our Colonial brethren will make use of our society when they are over here, and furnish us with matter which will assist in coördinating our work so that it may assume an Imperial scope. I may add that information as to the dates of our meeting may be obtained at any time by applying to our honorary secretary at this College.

The September number of the journal of the Royal United Service Institution contains a paper upon the Organisation of a Division, which offers fair grounds for criticism from our standpoint. Without attacking that problem directly now, I would draw attention to the author's failure to grasp the rôle of the A.D.M.S., with a division; at the same time his views of field ambulance organisation give food for thought, and may perhaps suggest a theme for a paper by one of our members. This matter is especially important at this time.

After all, the Field Ambulance is a cumbrous unit, and contains more hospital appliances, &c., than are necessary for its true function of rapid evacuation, while the fact that three of them are allotted to a division and occupy nearly a mile of road space is a serious consideration. I would suggest as a substitute for the present field medical units of a division, one organised as a battalion, with more stretchers and less hospital equipment than three field ambulances, and placed under one commanding officer. The ambulance battalion should have its equipment arranged on the principle of its being a collecting unit and temporary treatment depôt, and it should never be immobilised unless on emergency, and then *only in part*, and in that part only which constitutes the treatment depôt. Time will not permit of detail just now, but I have placed on the board a rough sketch of the battalion. There also you will see an "ambulance column," so needed to complete the link with the clearing hospital. I would reduce, as you see, the ambulance wagons now allotted to the field ambulances, and form the surplus into an ambulance column. I would place more ambulance wagons in that column if I had them, but the savings from the reorganisation I have sketched would supply at least the nucleus for an ambulance column. This brings to mind that the R.A.M.C.(T.) are to be congratulated upon their recent acquisition of clearing hospitals, together with the evacuating agencies afforded by voluntary aid detachments, which will link up the field army with the medical units on the lines of communication.

But our society's vision is not confined to tactical problems. There is much in our proceedings of value in

promoting the study of diseases specially affecting the Services and in improving the health of their members. For instance, there are many sanitary problems by the discussion of which we shall be mentally refreshed. It is not unlikely that the question of incineration in the field may receive a practical solution. By a discussion on this subject we may help to push forward what may become an immense sanitary gain in the field, and thereby a most valuable asset to the nation. At the risk of wearying you I should like to make further calls upon our members with a view to producing papers upon other subjects which may bear upon the health of the sailor or the soldier, and would ask those who have studied any problem likely to be of benefit to the Services not to hesitate to bring such before us. I feel sure that they will be welcomed heartily and that discussion will help the authors, while it widens the scope of thought of every individual.

And here I would ask members who may be diffident because they are junior in rank not to permit such false modesty to restrain them from joining in our discussions, and if they have no superlative opinion of their own intelligence, I would remind them that this society is not official. They will lose nothing by making their thoughts known. The words of thinking men of all ages are worth due consideration, and therefore I hope that all who have studied any medical problem, besides those I have touched upon, will express freely any opinions or experiences they feel would give completeness to our discussions. They will add thereby to the value of our deliberations, and extend our scope of usefulness.

HARD *v.* SOFT WATER.

BY JOHN C. THRESH, M.D. VICT., D.SC. LOND.,
MEDICAL OFFICER OF HEALTH OF THE COUNTY OF ESSEX.

IN the annual report for the county of Essex for the year 1910 I gave a series of statistics showing that (1) in the areas supplied with hard water the death-rate is quite as low as, if not actually lower than, that in the areas supplied with a soft or moderately hard water; and that (2) filtered river water, even when the river water impounded is known to be more or less sewage-polluted, is as wholesome as the water from the deep wells and springs in this county. These conclusions were based upon the statistics for one year only. The report proved of such interest that more copies were applied for than I could supply, and the applications were not limited to this country, the subject being one of equal importance in all parts of the world. When the Census returns for 1911 were received and the Registrar-General supplied me with factors for the correction of the death-rates on account of differences in age and sex distribution of the population in every district of the county, I decided to again consider the subject and take a period of five years as the basis for comparison. The results now given, therefore, are much more reliable than those published in 1911, but they support entirely the conclusion at which I then arrived.

The areas taken are exactly the same as before with the exception that in Group IV. I have included the Romford rural district. The reason for this is that it is decidedly urban in character and the great bulk of the population is supplied with the same water as that used in the Romford urban district.

Besides giving the average death-rates for the five years 1907–11 (inclusive) I have also given the death-rates for 1912, all corrected.

GROUP I.
(Hardness of water-supply under 10° per 100,000.)
Soft Water Area.

	Averages for years 1907–11.		Year 1912.	
	Population.	Death-rate per 1000.	Population.	Death-rate per 1000.
Burnham	3,150	8·9	3,200	11·5
Leigh-on-Sea	7,100	10·1	8,550	10·7
Maldon	6,100	11·0	6,335	11·5
Shoeburyness	4,800	10·3	5,075	8·7
Southend-on-Sea	56,200	11·2	67,280	9·7
Totals and averages	77,350	11·0	90,440	10·0

All the above districts have public supplies derived from deep wells in the Thanet sand or chalk, having a hardness of from 4° to 10°.

GROUP II.
(Hardness of water-supply between 10° and 20°.)
Moderately Hard Water Area.

	Averages for years 1907–11.		Year 1912.	
	Population.	Death-rate per 1000.	Population.	Death-rate per 1000.
Braintree	6,100	12·8	6,170	13·3
Brightlingsea	4,500	10·7	4,390	12·1
Colchester	41,990	12·1	44,160	10·7
Saffron Walden	6,230	9·7	6,350	7·6
Witham	3,470	10·3	3,480	14·0
Wivenhoe	2,400	7·9	2,500	10·4
Totals and averages	64,690	11·5	67,050	10·9

These country towns all derive water from sources similar to Group I., but the Colchester deep well supply is supplemented by water from gravel springs.

GROUP III.
(Hardness of water-supply 20° to 30°.)
Hard Water Area.

	Averages for years 1907–11.		Year 1912.	
	Population.	Death-rate per 1000.	Population.	Death-rate per 1000.
Clacton	9,300	12·0	9,850	9·2
Chelmsford	17,000	9·2	18,300	8·9
Epping	4,150	9·1	4,300	7·1
Frinton	1,400	8·0	1,570	8·5
Walton	2,150	9·9	2,190	9·9
Harwich	13,200	14·1	13,970	12·9
Halstead	6,200	12·0	6,300	9·0
Totals and averages	53,400	11·2	56,480	9·9

The Clacton supply is from springs, as is also a small proportion of the Chelmsford supply. The remainder derive water from deep wells in the chalk.

GROUP IV.
South Essex Area.—Moderately Hard Water.

	Averages for years 1907–11.		Year 1912.	
	Population.	Death-rate per 1000.	Population.	Death-rate per 1000.
Barking	30,770	13·0	32,520	10·6
Brentwood	6,500	8·8	6,940	6·2
Grays	15,810	11·0	16,420	10·7
Romford	16,550	10·2	17,600	9·5
Romford Rural	23,860	10·5	26,000	9·3
Totals and averages	93,490	11·2	99,480	9·9

These localities are all supplied with chalk water by the South Essex Water Company.

GROUP V.
Metropolitan Water Board Area.—Hard Water.

	Averages for years 1907–11.		Year 1912.	
	Population.	Death-rate per 1000.	Population.	Death-rate per 1000.
Buckhurst Hill	4,800	10·2	4,900	9·1
Chingford	6,500	8·55	8,880	8·9
East Ham	128,600	12·1	133,450	11·1
Leyton	122,100	10·4	126,700	10·8
Loughton	5,300	9·7	5,500	10·8
Waltham Cross	6,650	11·35	6,830	10·0
Walthamstow	118,800	11·6	123,480	10·4
Wanstead	13,200	8·5	15,700	7·2
Woodford	17,650	9·3	19,070	9·4
Totals and averages	421,300	11·1	454,310	10·6

Summarising the tables we obtain the results as under:—

—	Death-rate per 1000, 1907–11.			Death-rate per 1000, 1912.		
	Average.	Extremes.		Average.	Extremes.	
		Maximum.	Minimum.		Maximum.	Minimum.
Soft water area	11·0	11·2	8·9	10·0	11·5	8·7
Moderately hard water areas:						
(*a*) Country towns	11·5	12·8	7·9	10·9	14·0	7·6
(*b*) South Essex area	11·2	13·0	8·8	9·9	10·7	6·2
Hard water area:						
(*a*) Country towns	11·2	14·1	8·0	9·9	12·9	7·1
(*b*) Metropolitan	11·1	12·1	8·5	10·6	11·1	7·2

Arranged in order of death-rates we obtain the following interesting results:—

Average for 1907-11.

Soft water area	11·0 per 1000.
Hard water area (metropolitan)	11·1 ,,
,, ,, ,, (country towns)	11·2 ,,
Moderately hard water area (South Essex)	11·2 ,,
,, ,, ,, ,, (country towns)	11·5 ,,

Average for 1912.

Hard water area (country towns)	9·9 per 1000.
Moderately hard water area (South Essex)	9·9 ,,
Soft water area	10·0 ,,
Hard water area (metropolitan)	10·6 ,,
Moderately hard water area (country towns)	10·9 ,,

Naturally there are greater variations in the rates for single years than in the rates for a series of years, but it is obvious that there is no co-relation in either tables between the hardness of the water and the death-rates.

Taking the average for the five years the difference between the death-rate for the area with the softest waters and the area for hardest waters is, in one instance (the metropolitan area), only 0·1 per 1000, and in the other (country towns) only 0·2 per 1000, whilst the moderately hard water areas taken together have a death-rate exceeding that of the hard water areas of from 0·1 to 0·2 per 1000. These differences are so slight that only one conclusion can be deduced—namely, that the character of water-supplies in this county has no effect upon the death-rates.

Incidentally they also confirm the opinion expressed in my previous report that the filtered water from the sewage-polluted rivers, the Thames and the Lea, is as wholesome as the water from our very deep wells and gravel springs. As comparatively little water is taken from springs we may say that the filtered river water is as wholesome as the water from our deep wells, which are celebrated for their great organic purity.

In the report for 1910 I also showed that the incidence of cancer, phthisis, and enteric fever bore no relation to the water-supplies. The statistics for the five years are as under:—

Death-rates from Various Diseases in the Respective Water Areas for the Five Years 1907–11.

	Cancer.	Phthisis.	Enteric fever.
Soft water area	1·0	0·99	0·043
Moderately hard water areas—			
(*a*) Country towns	0·84	0·81	0·021
(*b*) South Essex area	0·86	0·90	0·121
Hard water areas—			
(*a*) Country towns	0·81	0·75	0·04
(*b*) Metropolitan area	0·83	0·81	0·041

The excessive mortality from cancer and phthisis in the soft water area is entirely due to that area including a large and populous seaside resort, and the medical officer of health has shown that fully 25 per cent. of the people who die there from these diseases were actually suffering therefrom when they entered into residence. In fact, they came to reside there in the hope of becoming cured or of prolonging life. When this excess is allowed for there is no excessive incidence in the soft water area.

The tabulated results afford no indication whatever of the hardness or softness of the water having any bearing upon the prevalence of or mortality from any of the three above-mentioned diseases.

It is important to note, however, in connexion with this investigation that the soft waters of Essex differ materially from the soft moorland and upland waters so widely used for the purposes of public supply. These waters contain very little saline matter and often contain so much free carbonic acid as to render them "acid" in character. The soft Essex waters contain no free carbonic acid, and all contain marked quantities of sodium bicarbonate, and may therefore be said to be "alkaline" in character. The inquiry therefore shows that such alkaline waters are perfectly wholesome, as wholesome, in fact, as waters from any other source.

Chelmsford.

LONDON HOSPITAL MEDICAL COLLEGE.—The following Entrance Scholarships have been awarded:—Price Scholarship in Science, £100, C. S. Cloake; Price Scholarship in Anatomy and Physiology for students of the Universities of Oxford and Cambridge, £52 10*s*., L. G. Jacob, of Christ's College, Cambridge; and Science Scholarship, £50, G. Adler.

ARTERIO-VENOUS ANASTOMOSIS FOR IMPENDING GANGRENE;

A REPORT OF 15 CONSECUTIVE CASES WITH ARTERIO-VENOUS ANASTOMOSIS OF THE FEMORAL VESSELS.

BY DR. CHARLES GOODMAN.

THE employment of arterio-venous anastomosis as a clinical procedure has given such widely different results in the hands of different operators, and has led to such a divergence of opinion on the part of these various operators as to the possibility of establishing a reversal of the circulation, that we have attempted the procedure in 15 cases in order to throw some light on the subject; we believe this to be the largest number of cases yet reported from a single source.

In a review of the literature by Halstead and Vaughan, published in January, 1912, they recall that Frank in 1881 was the first man to attempt an arterio-venous anastomosis. Since then many attempts have been made to produce a satisfactory arterio-venous anastomosis in animals, but without success, until in 1902 Carrel reported his perfected technique, and later in 1905 his work with Guthrie. It is the work of Carrel more than that of any other man that has led the surgeon to employ this procedure on the human being. Stich, Touffier, Frouin and Watts, Cottard and Leriche, and others have since then reported successful anastomoses in animals.

The first attempt to perform arterio-venous anastomosis in man was made by San Martin y Satrustegui in 1902, which proved unsuccessful. In 1912 Bernheim, of Johns Hopkins Hospital, reported 6 operations with 4 successes, and in his review of the literature reports and tabulates 52 operations which were performed by 32 operators; of these, only 15 were successful. End-to-end suture according to the method of Carrel was employed 23 times with 8 successes; lateral 12 times with 4 successes; invagination, end of artery into end of vein, twice with 1 success; intubation according to the method of Wieting, 9 times with 2 successes. Bernheim ascribes the large number of failures, first to the large number of operators; secondly, to the fact that a number of the cases were seen late in the course of the disease; and thirdly, that vascular surgery is still in its infancy and offers many technical difficulties.

The possibility of establishing a reversal of the circulation in an extremity has been questioned by Coenen and Wiewerowski, who have presented an array of experimental work against the practicability of the procedure. These views, however, as to the impossibility of the procedure on physiological grounds have been controverted by 15 successful cases.

As to indications, arterio-venous anastomosis is applicable in angeiosclerosis and in arterial thrombus, where the integrity of the limb may be preserved by this means until collateral circulation is established. In regard to methods, end-to-end anastomosis offers the most simple technique and is least likely to be followed by thrombosis.

We have tried the operation in 15 cases, and in this series we noted that the foot, previously cold and cadaverous in appearance, took on a feeling of warmth and a healthy pink colour. The valves of the veins were only a temporary barrier to the course of the blood against the constant pounding of the heart. The pain due to ischæmia was relieved shortly after the operation in all these cases. Strongly presumptive evidence of establishing a reversal of the circulation are the following facts: improvement of colour, increase of warmth of the affected part, relief from pain, filling of the superficial veins, pulsation of veins below site of anastomosis, and return of part threatened with gangrene, or the actual seat of gangrene, to the normal. All writers seem to agree that angeiosclerosis of the lower extremity is an ascending process and leads eventually to gangrene.

A review of our cases shows 6 successes. Several of these cases which promised success required amputation later, but even these had temporary relief from pain. In our experiments upon animals we have tried all the usual methods of anastomosis—end-to-end, side-to-side, end-to-side, intubation, and invagination. In our operations upon human beings we have used the end-to-end method in all

excepting one case, as we found it the simplest in execution and least likely to cause thrombosis. The operation should not be undertaken in the presence of sepsis, advanced or fulminating gangrene. The opportune time for intervention is in the pre-gangrenous stage before mortification has set in, in order to prevent its inception. In non-septic gangrene the improved nutrition of the limb may be hoped for, permitting lower amputation than would otherwise be possible, as is shown in several of our cases.

The utmost delicacy and skill in minute detail must be observed in order to avoid the formation of thrombi; a most rigid asepsis is required throughout the operation, or the object of the operation will be defeated. To reduce the dangers of thrombosis to a minimum we have practised the following precautions. Before the sheath of the vessel is opened the wound must be absolutely freed from, and dried of, any visible signs of blood, and then covered with sterile wound protectors. For this purpose we have used various materials and have found that a thin, black, oriental silk is best suited to this purpose; this material adapts itself to the wound without encroaching upon the operative field, and the colour removes the glaring and trying effect of the open wound upon the eyes of the operator during the more minute details of the operation.

The etiology of the condition which requires this operation is still obscure. With a view of throwing some light on the subject we have enlisted the coöperation of the laboratories of the hospital, and hope in the future to be able to advance some information regarding the disease. We can only hope that the operation will relieve the symptoms, arrest impending gangrene, and save the limb.

As an instance I will cite briefly the first one of our cases.

The patient, a man aged 35, referred to me by Dr. I. Seff, was admitted to Beth Israel Hospital on July 17th, 1912, with endarteritis of the left leg, necrosis of the tip of the great toe, and a large ulcer on the shin. He had similar trouble with his right foot three years ago, for which an amputation below the knee had been performed. According to his history of about one year's standing, he began to suffer pain in the great toe, and later the pain extended to the foot and leg; the pain was particularly acute at night. About six months ago an ulcer appeared on the tip of the great toe; the toe became very much swollen and the entire tip appeared gangrenous. Shortly afterwards an ulcer appeared on the shin. This ulcer and the one on the toe refused to heal.

When the patient was referred to me he was only able to get about with great difficulty. The great toe was swollen to about twice its natural size, was dusky in appearance, and the entire tip appeared necrotic, being extremely painful and tender to the touch. Elevation of the limb was followed by marked blanching of the foot; when the limb was suspended it became very mottled. A shallow ulcer about the size of half a dollar occupied a position on the lower third of the shin. Pulsation could not be felt below Scarpa's triangle in either the popliteal, tibial, or dorsalis pedis. The examination of the urine was negative; the Wassermann reaction was negative. The blood pressure was between 110 and 130. The radiograph did not reveal any calcareous condition of the vessels.

Arterio-venous anastomosis of the femoral vessels was performed on July 22nd. During the first 24 hours the temperature was 100°, and the pulse varied from 80 to 100. I had ordered the head of the bed to be elevated in order to favour the circulation to the limb, but the nurses, in accordance with the habit of raising limbs operated upon, placed several pillows under the leg, nullifying Fowler's position; as a consequence the patient suffered considerable pain. When the limb was placed in the dependent position on the following day the blanched appearance changed to a pink colour and his pain was immediately relieved. On July 24th (the third day) the patient said, "I am more comfortable than I have been for a year." On the fourth day the dressings were opened to inspect the limb, and very much to our surprise and satisfaction we found the ulcer on the shin had taken on a healthy appearance and was healing. At the end of ten days this ulcer, which had resisted all forms of treatment for six months, had completely cicatrised. The swelling on the great toe was diminished and it had taken on a more healthy appearance.

Two weeks after the operation a slight œdema was present and the limb became mottled. On August 10th it was found that the operative wound, which had only apparently healed by primary union, showed evidences of fluctuation, and the introduction of scissors was followed by a gush of clear serous fluid, which must have caused pressure on the vessels, for after it was evacuated the œdema disappeared and the toe began to heal. (This fluid was undoubtedly due to an excessive amount of vaseline which I had used during the operation to protect the vessels.) Three weeks later the toe was entirely healed. The patient was able to get about without discomfort and slept well without the aid of any hypnotics or anodynes.

The ages of our cases varied from 28 to 87 years. There were 13 end-to-end anastomoses, 1 side-to-side, and in 2 of the cases an exposure of the vessel showed that an attempt to anastomose was not warranted on account of the advanced stage of thrombosis of the vessels. In 2 of our cases with gangrene a low amputation seemed to be satisfactory. Of the 8 cases which were failures, including 1 death, 1 was a side-to-side anastomosis, and 3 of the remainder should not have been operated upon on account of the presence of spreading gangrene.

The predisposing factors in the causation of the symptom-complex of the disease and the results so far obtained by operation warrant us in believing that, whenever the operation is undertaken before gangrene has actually set in, the distressing symptoms can be relieved without the sacrifice of the limb to amputation, which heretofore has afforded the only means of relief.

In conclusion, I should like to emphasise that in the absence of infection, even if the lines of the vessels are not evenly approximated, the chink will be filled in with blood clot. As long as this minute blood clot does not project into the lumen of the vessel there is no accretion and it does no harm. Fibrous connective tissue will grow in and organise the blood clot, and the cells which finally reach the surface will become competent as endothelial cells. In other words, a foreign body in blood-vessels, such as a suture, if it is contaminated with ferment, will produce thrombosis. This is exactly what has been attempted in the treatment of aneurysm with electrolysis; the current kills a certain number of blood cells, a certain quantity of ferment is liberated, and accordingly a certain degree of thrombosis is produced. The secret, therefore, of suturing blood-vessels and retaining the normal continuity of the vessels is to render the operative field as free as possible from thrombo-kinase.

New York.

FORMATION OF AN ARTIFICIAL VAGINA BY TRANSPLANTATION OF A PORTION OF THE ILEUM (BALDWIN'S OPERATION);

WITH REMARKS ON THE ETHICAL ASPECT OF THE PROCEDURE.

BY VICTOR BONNEY, M.S., M.D., B.SC. LOND., F.R.C.S. ENG., M.R.C.P. LOND.,

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THE surgical treatment of congenital absence of the vagina was extremely unsatisfactory until the American surgeon Baldwin introduced the operation associated with his name, whereby a piece of the ileum transplanted between the bladder and rectum is made to do duty for the missing canal. The method surmounts the chief difficulty that beset all former procedures—namely, the extreme liability for the artificial vagina to contract and prove useless for coitional purposes.

The ethical aspect of the operation provides a wide field for individual opinion, for though its result achieves fitness for the sexual act, sterility must remain in spite of it in the vast majority of cases. Before, however, embarking on this subject I will relate the details of the following case:—

History.—The patient, a girl aged 19 years, was brought to me in 1912. She was stout, well grown, and good looking, and externally all the feminine characteristics were well developed, but she had never menstruated. On account of the amenorrhœa her mother took her to a practitioner, who found complete absence of the vagina. She was sent into a hospital under a gynæcological surgeon, who discountenanced any attempt to remedy the deformity. In consequence of this pronouncement her engagement to a young man was broken off to her great distress. Later she became attached to another young man, but the knowledge of her deformity precluded any idea of marriage. In consequence she became profoundly depressed, and even threatened suicide. The practitioner then sent her to me with a letter strongly urging that if possible something should be done on account of her mental condition.

When I first saw the patient her aspect was that of deep depression. On rectal examination no trace of the uterus could be felt, but both ovaries appeared to be well developed. Though no monthly loss occurred the girl alleged that every month she felt "queer inside," at which times her depression greatly increased. These statements were corroborated by her mother, who also informed me that the girl's sexual feelings were active. The patient was highly intelligent, and she discussed her condition without reserve and with much common sense. The nature of the proposed operation, its limitations, and its risk were fully explained to her and to her parents, and they were given time to decide the matter amongst themselves.

Operation.—As a result of the deliberations of the parties concerned I operated by Baldwin's method in June, 1912. The patient was first placed in the lithotomy position and an incision was made transversely between the meatus and the anus in the situation where the vagina should have been. The urethra and bladder were then separated from the rectum until the peritoneum was reached. A long pair of forceps was then passed upwards to the peritoneum and packed round with gauze. The patient was then placed in the Trendelenburg position and the abdomen was opened in the middle line below the

umbilicus. On exploring I found both ovaries unusually well developed, one of them containing a large recently dehisced follicle. The upper ends of both Müllerian ducts were well formed, a mesosalpinx and the ampullary segment of the tube with the fimbriated extremity being present on either side, but below this they formed a couple of solid cords which after joining with the round ligaments coalesced in the middle line to form a little nodule of tissue just behind the bladder. The terminal portion of the ileum was pulled up and a loop of it chosen about eight inches long where the mesentery was found to be longest; the centre of this loop was about ten inches distant from the ileo-cæcal valve. This loop was then isolated by dividing the bowel at either end of it, closing those ends by suture and restoring the continuity of the intestine by an end-to-end anastomosis. The mesentery was then divided nearly down to its base in a V-shaped manner, so that the isolated segment of ileum merely remained attached by a narrow pedicle. The edges of the mesentery in the continuity of the bowel were brought together by sutures. An assistant now pushed upwards the forceps previously placed in the site of the future vagina, and the little nodule representing the union of the Müllerian ducts and the rest of the tissue over the forceps was divided until they could be pushed into the peritoneal cavity. The isolated loop of ileum was now seized at its middle and pulled downwards into the vaginal site until the part held by the forceps appeared at the vulva. This was the difficult part of the operation. The patient was very fat, of the stout "cobby" build, and the mesentery was short. Moreover, I had isolated an unnecessarily long segment of the gut. It was not until I had shortened this considerably and further divided the mesentery holding it that I was able to get it entirely into position. The peritoneum between the bladder and rectum was now stitched over it and around its mesentery, and the abdominal wound was closed in the usual way. The patient was now placed in the lithotomy position again, and the loop of gut opened at its apex attached by interrupted sutures to the edges of the vulval wound, and lightly packed with gauze.

Result.—The patient made a good recovery. The transplanted loop survived and adhered. For some weeks the daily introduction of glass vaginal dilators was practised, but when it became apparent that no contracture was going to occur this was desisted from.

The local condition now is that of a septate vagina, each limb of which easily admits the finger. I had intended dividing this septum to make a single canal as practised by Baldwin, but when I last saw the patient it had retracted considerably to form a spur, and I therefore decided to leave it alone. If she marries and the spur gives rise to difficulty, it can easily be divided. The canal appears at present to be sufficient for coitus; it is quite free from pain or tenderness. Since the operation the patient has had a watery mucous discharge, yellow in colour and flocculent in appearance, but this is much less than it used to be. The depression has disappeared and she is bright and cheerful.

Those interested in the surgery of congenital absence of the vagina should read Balfour Marshall's admirable review of the subject in the twenty-third volume of the *Journal of Obstetrics and Gynæcology of the British Empire*. He there points out that 15 cases of ileum transplantation have been performed, 11 by Baldwin's method and 4 by that of Mori, which only differs from that of Baldwin in that he uses a single instead of a doubled-up loop of the intestine. All the cases recovered. That a very definite risk attends the operation is, however, not to be denied.

The Ethical Aspect of the Operation.

Turning now to the ethical aspect of the operation certain authorities hold that where childbearing is impossible the procedure, merely to enable coitus to take place, is unjustifiable. I cannot agree with this view, which assumes that the whole object and usefulness of marriage lies in child-bearing. From the racial aspect it is no doubt true, but there are other points of view, the social and the personal, which much more directly influence the individual. That married life may be happy and useful though the wife is obligatorily sterile is common experience. Many women have married after hysterectomy or even double oöphorectomy and yet enjoyed connubial felicity. To a certain proportion of men the fact that their wife cannot have children is no drawback, and though marriage when sterile is a failure as far as regards the race, yet if it brings happiness to the parties concerned it has a very definite social and individual value. To condemn the unfortunate sufferer from this deformity to abandon for ever the natural hope of some day meeting with a companion and support in the battle of life therefore seems to me to be wrong.

On the other hand, it is important to bear in mind that in a certain proportion of these patients the ovaries are undeveloped and the sex sense wanting. Intercourse in the absence of sexual feeling on the part of the woman is very apt to be unsatisfactory even with a normal condition of the parts. Much of the domestic unhappiness that the practitioner sees has it origin in this cause.

In children.—The construction of an artificial vagina should never, therefore, be undertaken until after puberty, for not till then can the fitness of the woman for marrying be estimated or her wishes on the subject consulted.

In unmarried women.—In the larger number of cases of congenital absence of the vagina the girl is brought to the medical man merely because the menses have failed to appear and not because she is suffering either physically or mentally or because marriage is in contemplation. Examination reveals absence of the vagina, a rudimentary condition or complete absence of the uterus, and not infrequently undeveloped ovaries. In my experience these patients are usually conspicuously healthy. Under circumstances such as these no operation is indicated, and, indeed, it will be found that neither the patient nor her parents have any wish for it directly they are satisfied that the absence of the monthly periods is not detrimental to health. The state of affairs ought, however, to be made clear to the mother if possible, and the feasibility of partly overcoming the results of the deformity should marriage be contemplated should be explained to her. For future guidance inquiry should be made as to whether monthly sensations indicative of a "period" (and therefore of functional activity of the ovaries) are noticed by the patient.

There is another class of case, however, in which an unmarried girl is brought to the practitioner, either because (1) the deformity is giving rise to physical suffering owing to retention of menstrual blood in the uterus; (2) marriage is in contemplation; or (3) the knowledge of the deformity is producing mental symptoms.

1. Cases of hæmatometra due to absence of the vagina are very rare, because in most instances the deformity is associated with a non-development or a complete absence of the uterus. There can be no doubt that it would be possible to combine Baldwin's operation with implantation of the uterus into the transplanted segment of ileum, but the procedure has never yet been carried out. An alternative would be to perform Pfannenstiel's operation, in which, after loosening the uterus, the organ is pulled down between the rectum and bladder and the cervix attached to the vulvar mucous membrane. Unfortunately, most of these cases present themselves late and after the retained blood has led to hæmatosalpinx and pelvic peritonitis. Under these conditions an attempt to conserve the uterus would be a mistaken policy, and it would be better to remove it.

2. Where marriage is in contemplation the question of the propriety of the operation requires careful consideration. The character of the patient, the degree to which she desires marriage, her fitness for that state as evidenced by a history of menstrual molimina and the possession of normal sex feelings, should all be inquired into, and the nature of the operation and its limitations and risk must be explained to her. The wishes of the parents must also be consulted, whilst as regards the fiancé it would be best for the medical man himself to explain to him the state of affairs. Where a consensus of opinion in favour of the operation is arrived at by the interested parties the operation is, I think, entirely justifiable.

3. Where the knowledge of the deformity is producing mental symptoms, as in the case I have just recorded, and where after full explanation both the girl and her parents are agreed in desiring the operation, it is, in my opinion, right to perform it.

In married women.—Finally, we come to that class of patient in whom marriage has occurred before the deformity has been recognised, when remedial measures may be sought for: (1) as a sheer act of self-sacrifice on the woman's part, she herself having no sexual desire; or (2) to satisfy the sex sense of both parties.

1. It has been pointed out that a proportion of these patients are sexually deficient, and that under such circumstances the mere provision of a coitional vagina is not likely to be satisfactory from the marital standpoint. Where the patient asks for the operation solely under pressure of her husband's desires, I am of opinion that both he and the surgeon who performs it incur very grave responsibility. Sad cases of this type are sometimes met with. Some years ago a patient was sent to me with the following history. She married without knowing her disability. In spite of it, however, her husband was faithful and they lived together happily. They adopted a little girl as they could

have no children of their own. When this girl grew up illicit relations became established between her and the husband, who deserted his wife to go and live with her adopted daughter. The unfortunate woman believed that rectification of her deformity would be the means of bringing her husband back to her. I, of course, refused to operate. No man whose affection was real and worth keeping would entertain the idea of his wife risking her life solely for his gratification. In the case of such individuals the divorce court provides the proper solution of the difficulty.

2. Where, however, the sex sense of the woman is active, and she desires the operation not merely to satisfy her husband but for her own gratification as well, the case is different, and if after the nature, limitations, and risks of the procedure have been explained to the parties the patient elects to undergo it the surgeon is, I think, entirely justified in performing it.

Devonshire-place, W.

THE USE OF ATROPINE TABLETS FOR THE DETERMINATION OF REFRACTION IN CHILDREN.

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CHIEF CLINICAL ASSISTANT AT THE ROYAL LONDON OPHTHALMIC HOSPITAL.

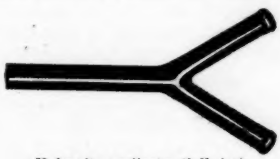
SINCE first undertaking the treatment of London County Council school children in the special department set apart for these cases at the Royal London Ophthalmic Hospital (Moorfields) in 1910, I have for varying periods made use of tablets of atropine for refraction, and have done so continuously since September, 1912. Ever since then I have been increasingly convinced both of the convenience and of the efficacy of this means of effecting paralysis of accommodation in children. In this short paper it is my wish to give a brief account of my experience with this method in the hope that more will be led to give it a trial.

In most hospitals and school clinics atropine is still ordered for children in refraction cases, either in the form of an ointment or of solution containing from 0·5 per cent. to 1 per cent. of atropine. The directions given for its use in these forms show a diverse and uncertain opinion as to the time necessary to obtain paralysis of accommodation; in the majority of cases ointment or drops are ordered to be used twice, three, or even four times a day, for anything from two, more often from four to seven, or even 14 days before the refraction is estimated. I contend that this practice is quite unnecessary, and a not inconsiderable waste of both time and expense, not only to the parents or guardians, but also to the hospital.

In justification of this custom of giving atropine one is told that it is the most convenient method, and that it is a saving of time. It may be so if the one who orders the ointment or drops does not also do the refraction on the return of the child, but in no other circumstances; and in any case I consider that the fact of the child and guardian having to make a second visit in order to save this time is a matter which in many cases entails no little hardship and expense to those who are least able to afford it. The only other argument advanced in favour of the use of ointment or drops at home for several days is the one that unless atropine is used for several days complete paralysis of accommodation is not obtained in all cases. I have never heard this argument advanced by anyone who has given the tablet method an extended trial, and I am convinced that if more would do so they would be satisfied that it is not only unnecessary, but a positive waste of time to do otherwise. For those who have not tried this method I will give a few details as to the use of the tablets.

First of all I may say that I have always used Messrs. Burroughs Wellcome and Co.'s ophthalmic "tabloid" brand of atropine sulphate, and have always found them highly satisfactory, combining as they do all the merits that an ophthalmic tablet should do—namely, speed in dissolving, accuracy of dosage, reliability in action, non-friability in handling, and a power of keeping for a long period, some that I have used having been in stock for several years. I have used the following strengths—namely, 1/500 grain, 1/200 grain, 1/100 grain—and find that the 1/200 grain tabloid is a satisfactory strength for the purpose. The application of ophthalmic tablets to the eyes is, perhaps, the one part of this method which some will at first find difficult, and I hope that a few words on this will not be out of place.

After the routine external examination of the eyes, including the subjective test for distant and near vision, has been carried out, I take two tablets in the palm of my left hand, pick one up with the forefinger and thumb of my right hand, throw the remaining tablet into the palm of my right hand and pick it up with my left forefinger and thumb. I then ask the child to look up, and at the same time I draw down both lower lids by means of the ring finger of each hand; the tablet is then dropped into the lowest part of each fornix. Should the child tend or attempt to close the upper lids this can be prevented by holding them up with the middle fingers. Immediately the tablets are put in the child is asked to look at you, and at the same moment the lids are released; in this way the tablets are successfully entrapped in the fornices by the lower lids. This will perhaps seem a lengthy dissertation on a simple procedure, but by watching some attempt it I have proved that a few words of advice are helpful. By those who find the use of their fingers not so easy, I have had a double-pronged vulcanite applicator made, which Messrs. Burroughs Wellcome and Co. kindly undertook for me, a sketch of which is here shown.



Vulcanite applicator (full size).

With this applicator a tablet may be attracted to each prong-leaving one hand free with which to draw down the lids at one and the same time.

My reason for desiring to insert the tablets simultaneously, or as near as possible to this, is that if a tablet is put in one eye and that eye is allowed to close before applying the second to the other eye, it will be found that the child feels the first tablet, "screws up the eyes," and makes it extremely difficult to get the second one in. My reason for wishing to entrap the tablet in the lower fornix is that unless this is done the tablet is apt to ride up on to the cornea and thus cause irritation with copious flow of tears before it is fully dissolved, and in this way it may be washed out of the conjunctival sac on to the edge of the lids.

If the procedure is carried out as I have indicated it will be found that the tablet is dissolved almost before the child is aware that there is anything in the eye—in 10 to 20 seconds; very slight smarting is then felt, there is a little pericorneal flush, the pupil dilates fully in from 10 to 15 minutes, and there is a complete paralysis of accom, modation in half an hour, at the end of which time I estimate the refraction and order the appropriate lenses. Accommodation is fully restored in from six to eight days. I have now dealt with over 800 children in this manner, and have only once had to apply a second tabloid to get paralysis of accommodation, and in that case it was due to faulty application of the first tabloid, part of which was found on the edge of the lid. It is the rarest thing to find any child cry after having put the tabloids in, and those few who have done so have always shown indications of approaching lacrymation almost before any attempt at touching their eyes had been made. The younger the children the less trouble it seems to cause them, their ages ranging from 4 to 14 years. In applying tablets to a dozen or more children one after the other they are generally all smiling freely after the first one or two have braved the ordeal; select your first two children, and if it is a good selection they will probably laugh over the sensation and the rest will follow suit.

I have more particularly wished to give my experience in this method of atropinisation in order to point out the enormous advantage in time and convenience it has over the home use of ointment or drops in dealing with the refraction of school children in school clinics and suchlike centres where many children are collected together at the same

time. It necessitates only one visit; whereas with the use of ointment or drops it is the invariable experience, no matter what elaborate instructions, written or otherwise, are given, that at least one or two, and often more, out of every dozen return for refraction, either not having used the ointment at all or only partially so. They are then sent back a second time with a further supply of atropine, which although not used the first time yet in some way has mysteriously disappeared. Then, again, a certain number of the cases do not return at all, whereas if the tablets have been used on the first visit there is no chance of escape from refraction at any rate. The use of atropine at home, too, is not such an easy matter, especially when it has to be done three or four times a day for several days. It requires not only experience but time and patience, and how often, as one knows, the home and mother are already saddled with a hundred and one other duties.

One further point to which I would like to draw attention is that I have not yet seen any case, when using these tabloids, present any signs or symptoms of atropine irritation or poisoning. As regards actual cost of material, the tablet method compares very favourably with that of ointment or solution, the hospital price of the tabloids working out at about 6*d.* for a tube of 25, so that 12 cases can be refracted at a cost of a fraction less than ½*d.* each. Atropine ointment is supplied in two-drachm chip-boxes at a cost of a ½*d.* each, in addition to which a glass rod for application has also to be given, and time spent in the dispensing of the ointment or solution.

London, W.

THE USE OF GELATIN IN MICROSCOPICAL TECHNIQUE.

BY W. JOHNSON, M.D. LOND., M.R.C.P. LOND.,
GULL STUDENT, GUY'S HOSPITAL.

AT the Conference of the Sudwestdeutsche Neurologen und Irrenärzte held in Baden-Baden on May 24th and 25th, Professor Edinger (Frankfort-on-Main) showed several microscopical specimens mounted in gelatin in place of the usual mountant, Canada balsam. As I have had the opportunity, while working in his laboratory, of practising this method, I append details for any who may wish to make use of it. The technique has been developed from suggestions originally made to Professor Edinger by a photographic chemist, Mr. Ralph Liesegang, and has been worked out chiefly from the point of view of utilising it for neurological preparations. It is, however, by no means confined to this particular branch, but can be applied to most pathological work.

Sections may be cut by any of the usual methods—viz., freezing, paraffin, or celloidin. They can then be stained in the ordinary way, and all stains are available with the exception of those which can be extracted from the tissues by immersion in water. This group of exceptions is not large, but, unfortunately, it includes Nissl's method and all others in which the aniline dyes figure. Efforts which we made to fix these dyes in the tissues—as, for instance, by the use of solutions of varying strength of ammonium molybdate—preparatory to placing the sections in water, have proved unsuccessful. Further work may possibly overcome this difficulty.

Having completed the staining process the section is put into water and is now without further treatment ready for mounting in the gelatin solution.

In the preparation of this a few essentials must be noted. Firstly, the solution must be freshly made and the best results are only obtained when the special gelatin, as used for photographic plates, is employed. Of this, 10 grm. are taken and allowed to soak for two hours (preferably overnight) in 100 c.c. of distilled water. When about to be used this solution must be warmed to a temperature of 50° C. by means of a water bath in order to render it sufficiently fluid. It is advisable to filter it beforehand, also at this temperature.

As much of this warm solution is then gently poured on to the slide as can be put on without any overflowing. It is important to pour on as much as possible in order to get a sufficiently thick film of gelatin in the final result. When large sections are being treated it is better to keep the slide on a warm stage, and in the case of frozen or celloidin sections to pour on a thin layer of the gelatin solution first before putting the section in position on the slide. Larger sections still can, with profit, be immersed in the solution for a few minutes beforehand. The preparation is now left exposed to the air, and in the course of a few hours the water evaporates and one is left with the slide covered with a fine transparent film of gelatin in which the section is imbedded. This film behaves in every particular like the gelatin film on a photographic plate. It is intensely hard, resists scratching, and can be packed face to face with other specimens without involving the risk of finding them glued firmly together as is the manner of Canada balsam. Under the microscope a perfectly clear picture is given, and if necessary cedar-wood oil, for oil immersion purposes, can be used.

The great advantage of the method is the economy of time and material which results. There is no tedious transferring from dish to dish for the processes of dehydrating and clearing. Thus alcohol, xylol, Canada balsam, and coverslips are entirely dispensed with, and in addition one does away with the danger of injuring large brain sections which attends too much handling. Apparently specimens will keep indefinitely. Weigert-Pal preparations — for which the method is eminently suitable—have been preserved for three years. Serial sections, which require large slides and coverslips, lend themselves to this manner of mounting. Finally, perhaps, botanists may find here a useful servant. Their chlorophyll specimens, being untreated by alcohol, are able to retain their pigment unaltered, and so can be mounted in the natural state.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF ACCIDENTAL COAL-GAS POISONING, WITH RECOVERY.

BY WALTER ROBERT S. JEFFERISS, M.D., C.M. EDIN., D.P.H.

AS cases of accidental poisoning from coal-gas are not frequently met with in general medical practice, perhaps the following notes of a case may be of some interest to medical men.

On Oct. 4th, 1912, I was asked to go to the relief of a man over 60 years of age who was supposed to be dying. On reaching the house I found the whole place smelling strongly of coal-gas, and on going upstairs to the bedroom, a room of about 11 ft. square, I found the man lying on the bed on his back quite insensible, breathing stertorously, and to all appearance not far from death. There was also one other occupant of the room, a small grey linnet in a cage overhanging the bed, but it, alas, had sung its last song and was lying dead on the floor of its cage. The man's face was livid; his eyes were wide open, the pupils firmly contracted, and the corneal reflex gone. There was not a trace of consciousness left, and the breath smelt strongly of coal-gas. The bowel sphincter was relaxed; the temperature was slightly subnormal, the body being well covered in bed; and the pulse was 68, regular, and moderate in strength. I had the patient brought close to the open window and resorted to artificial respiration, coupled with cold affusion to the head and flicking the body with a wet towel. Consciousness gradually returning, and the patient being now able to swallow, I gave him some hot, strong coffee, a spoonful at a time, and after an hour's efforts he recovered, and I left him in the charge of his relatives. On the next day, after a good natural sleep, the patient seemed quite himself.

The history of the case is as follows. The patient, who lived with his son, not feeling very well on the previous day, had retired to bed somewhat earlier than usual, the gas being lighted to warm the room as there was no fire. The bedstead blocked the fireplace, the door and window were shut, and the gas was allowed to burn

all night, or rather up to a late hour of the night, when the son, as was his custom, turned off the meter on going to his own bed, but omitted to turn off the gas-tap in his father's bedroom. The father, seeming tired, continued to remain in bed, and the relatives considering that he was not "up to much" advised him to rest until after dinner-time, which he agreed to do. After breakfast-time the son had occasion for business requirements to turn on the gas downstairs again, forgetting that the gas-bracket had never been turned off in his father's room. During the afternoon the relatives went upstairs and found the patient as I have described, the room full of gas, and the gas-bracket still on.

This recalls to my recollection an extraordinary case of murder, where the secret opium poisoner used coal-gas to cover up his crime by pretending that his victim (his wife) was dying from accidental poisoning by the escape of coal-gas in her room, and then calling in a medical man, who, at first believing his tale, used similar measures as were used in this case, but finding no success sent for an expert to assist him, and as a result they considered the best thing was to remove the patient to a hospital for further treatment and watching. Their efforts were unsuccessful, and the woman died. A post-mortem examination threw no light on the case, but a small stain on her pillow at her own house was analysed and found to be extract of opium. The poisoner attended his victim's funeral, was shadowed, and then arrested, brought to trial, convicted, and hanged at Edinburgh in 1866. In this case the poisoner had broken through the gas-pipe, which was behind a shutter in the room, and thus allowed the gas to escape, which he thought would mislead the medical men and cover up his crime.

During the past year or two I have met with two or three would-be suicides who have tried to effect their purpose by using coal-gas inhalations, but were rescued by their relatives in time to prevent a fatal termination to their foolish attempts.

Chatham.

NOTE ON A NEW OPERATION FOR FEMORAL HERNIA.

BY G. S. THOMPSON, F.R.C.S. ENG.

I THINK it will be admitted that most, if not all, of the operations for femoral hernia are theoretically if not practically unsound, and therefore leave much to be desired. Simple ligature of the sac here, as opposed to the same proceeding in the inguinal variety, is obviously inadmissible. Muscular obstruction to the canal has not yet readily been effected, as far as I am aware, and its attempt by means of a flap from the pectineus muscle can be only temporary, since the tissue used by being inevitably deprived of its nerve-supply must degenerate into a fibrous mass, to say nothing of the objectionable mutilation. This flap method may or may not form an efficient barrier; at any rate, it cannot be relied on with certitude. Approximation of Poupart's ligament to Cooper's ligament or the pubic bone by suture, staples, or wire is apt to alter detrimentally the anatomical arrangement of the parts, causing, amongst other things, undesirable pressure inwardly and from above on the vessels to the lower extremity, whilst metal bodies in this region are a possible source of danger, to say nothing of the loosening of such things as staples. Of all these processes a modification of one of the last, by means of a loose suture between the two ligaments arranged in the form of a network, and acting like a filigree by provoking infiltration by fibrous tissue, would appear to be the best.

The means I adopt and will now describe involve the use of a specially but easily prepared celluloid filigree shaped so as to fill the triangular femoral hernial space. I have already[1] drawn attention to the value of celluloid in some departments of surgery, and amongst other things indicated the especial value of a perforated celluloid plate rather than silver wires as a general filigree substance for large and suitable hernias. Several rectangular-triangular pieces of thin sheet celluloid of various sizes and the shape of the femoral canal are cut. The short outer side is rendered slightly concave, the long side corresponds in position to Poupart's ligament, while the third side opposes Cooper's ligament. These celluloid triangles are riddled with perforations by a fine punch, and the sharp angles thereof are rounded off. The outer concave border is then turned back at right angles to the remainder, and by means of the thumb-nail the flange thus formed is made to present a concavity at its junction with the rest of the plate. Subsequently this flange will be outermost, resting against the vein, and is formed to eliminate the sharp edge that might otherwise ulcerate into the vein and produce disaster. So much for the filigree.

Regarding the operation, a nearly transverse incision having been made over the saphenous opening, the canal defined, and the sac ligated, the connective tissues in the space are gathered outwards so as to form against the vein a cushion next to which the flange will rest. The femoral triangle limited by Poupart's ligament above, Cooper's ligament and the bone below, and the vein and connective tissue externally, is then clearly and cleanly defined. A suitably sized filigree is next chosen and inserted into this space and will rest against Poupart's ligament above, Gimbernat's ligament internally, the pubic bone below, whilst the flange opposes the vein externally, from which it is separated by the pad of loose connective tissue already referred to. Three temporary catgut fixation stitches are inserted through the perforations at convenient spots, thereby fixing the filigree to the above three ligamentous structures. The operation is thereafter concluded. The femoral canal is now completely obstructed and in a short time following the operation the perforations of the plate get riddled by fibrous tissue, as a result of which the plate becomes covered by, and embedded in, the same and thereby firmly fixed *in situ*. By this means the canal is permanently, thoroughly, and satisfactorily closed without causing pressure on, or injury and improper disturbance to, the parts; and hence an impassable barrier is constituted. Moreover, the vessels cannot be damaged or interfered with by this plan, and I think the method will prove not only the most but quite a satisfactory means, to the exclusion of all others, of coping with this troublesome condition.

Amongst other things, celluloid has the great advantage of being flexible, and consequently of adapting itself to every varying conformation of the part. Boiling is apt to crinkle this substance, and therefore it is preferably sterilised by being inserted in alcohol or some antiseptic for some time preceding its use. Celluloid can be obtained in thicknesses varying from that of the ordinary photographic film to cardboard, but for this part of the body the thinner sheets are desirable as forming a resilient and light yet efficient barrier, consisting ultimately of celluloid and its investment of fibrous tissue, which forms a femoral diaphragm.

The same principle as already utilised may be modified and adopted by using a triangular floss-silk or chromic catgut network filigree; and this would constitute an improvement on the plan of constructing *in situ* a mesh by suture of the ligaments of the part—a manipulation, as a fact, not easy of satisfactory accomplishment. If this modification be preferred or is preferable, several sizes of fine meshed triangles should be constructed and the surplus threads prolonged from each angle and two or more places from the upper and lower sides for purposes of suspension and fixation. The outer side of this kind of filigree, as in the case of the celluloid homologue, would be concave. The free threads will be used for fixing the netted filigree to the ligaments of the femoral triangle. This net filigree will have the same effect as the celluloid plate, provoking, and resulting in, the formation of a fibro-cellular diaphragm superimposed on the artificial septum introduced. As the former would probably be adequate to obstruct the canal, an absorbable material like chromic catgut might be sufficient to meet all requirements, failing which floss-silk would be indicated as the substance of choice—a question, however, which time alone can answer.

Kimberley, South Africa.

[1] Brit. Med. Jour., July 30th, 1910, p. 257.

TINCTURE OF IODINE AS A HOUSEHOLD REMEDY.

BY EDMUND OWEN, F.R.C.S. Eng.,
CONSULTING SURGEON TO ST. MARY'S HOSPITAL, LONDON.

IN recent years surgeons have learnt that a quick and easy way of rendering a wound or a surface of skin surgically clean is by painting or swabbing it with fresh tincture of iodine. To make the method quite trustworthy, the part should be dry at the time, so that the alcohol of the tincture may carry the iodine into the depths of every pore or crevice.

But the public have not yet been taught that they also might find the tincture a valuable friend and protector; that they ought always to have a small bottle of it close at hand,

and that by its prompt use they might prevent many a cut, prick, or scratch becoming the breeding-place of the dangerous germs of abscess, erysipelas, or even lock-jaw. The first-aid man should certainly carry some of it in his pouch, and the cyclist in his wallet. The gardener ought to have a bottle of it within reach, as the germs of lock-jaw live in the soil in which he works. The groom and the horse-keeper should be made fully aware of its value and importance, for the earth of the stable-yard and of the high-road on which they may be wounded is likely to be teeming with these same germs. The school matron should be ready to apply the tincture to the cut finger, the grazed knee, the barked shin, and the kibed heel, and a small bottle of it should be in every workshop and factory. And in the case of a compound fracture, or other grave wound, a pad of wool or linen dipped in the tincture should be placed directly over it, before the doctor has had the chance of seeing it.

The first-aid teacher and the health lecturer should call particular attention to the value of tincture of iodine, and should urge its use in such circumstances as those suggested in preference to all other antiseptics, and should explain why it should be applied to the dry surface.

Amongst the many advantages of the tincture is this, that it is not poisonous or harmful as carbolic acid is apt to be, and that it can be applied straightway, without preparation and also without fear of doing any damage.

Upper Berkeley-street, W.

Medical Societies.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

A General View of Malingering.

THE thirty-second annual session of this society was opened at the West London Hospital on Oct. 3rd, when Dr. F. S. PALMER was inducted as the new President. The "Keetley Memorial Medal" was presented by the President to his predecessor in office, Dr. G. P. Shuter, to whom a very hearty vote of thanks was accorded.

Dr. PALMER then delivered his presidential address, entitled "A General View of Malingering." The term malingering, derived from the French adjective *malingre*—weakly or sickly—had acquired a special significance and much wider application. The present-day interpretation of the word included the *suppressio veri* as well as the *suggestio falsi*, and the reason probably was that there was no essential difference between the simulation of disease to extort money from an employer and the deliberate concealment of known ill-health to defraud a company or corporation. Formerly it was chiefly encountered in the army and navy, among prisoners, and the inmates of hospitals and workhouses, but recently it had become more general, particularly among industrial workers. Among the influences which promoted malingering was the trend of modern legislation. Since the Workmen's Compensation Act of 1906 came into operation the number of claims had gone up by leaps and bounds, and precisely the same experience was reported from France and Germany, where the accident laws were older than our own. Employers had discovered that it was cheaper to settle claims out of court than to contest them. Although the activities of some speculative lawyers and so-called legal aid societies stirred up strife between employers and employees and encouraged malingering, it was a mistake to suppose that the enormous increase of claims admitted by most of the Approved Societies was due entirely to malingering. The National Insurance Act had opened a new and perilous chapter in history and unlocked the floodgates to the risk of malingering on a scale hitherto unknown. Six months' working of the Act had shown that the sickness claims of women were amazing. The desire to get something back for what had been paid was a human failing. The logical sequence to compulsion was resistance, and that it would take the form of malingering in many instances was a certainty. The psychology of malingering was a complex and interesting study; pecuniary gain was not always the underlying motive, and other influences were often at work, such as idleness and a desire for sympathy or notoriety and resentment. Hitherto, the largest proportion of claims were for the results of accident or injury, and extravagant damages were often demanded from wealthy employers, corporations, or the State. Many persons fit to return to work were restrained from making the attempt when litigation was in the air by the fear that it might prejudice the issue. Introspection, suggestion, repeated medical examinations and consultations with solicitors, according to the psychological law, led to the intensification of symptoms, and so long as these mischievous agencies continued in operation the abnormal mental condition was not likely to improve. Although it was the duty of the profession to discountenance any kind of fraud which came under notice, no doctor was expected to undertake the duties of a detective. If he acted in good faith not much was to be feared, and no sensible medical man would make an accusation of malingering unless he was prepared to bring forward positive evidence in support of the charge. Precipitate action was to be condemned. In doubtful cases it was far better to be deceived than to allow unjust suspicion to fall on the victims of some obscure or depressing disease. The essential feature of malingering was deliberate deceit to gain some desired end. Valetudinarianism occupied a different position. The President then considered the various methods of malingering. Valetudinarianism was of great importance from the medical standpoint. Many of these cases, no doubt, came under the head of unconscious or subconscious malingering, but it also included a considerable proportion of genuine invalids who demanded the utmost sympathy and protection. Surgical cases gave far less trouble than medical ones; there was not much scope for fraud in visible physical injuries. When objective signs were present they could be deciphered on regular lines, but if the complaints were only subjective one had to rely on the none too reliable statements of the claimants. Some of the so-called functional cases deceived the very elect. Before a diagnosis of functional disease could be made organic signs must be eliminated from the field of inquiry. The sufferings of the true neurasthenics were only too sad and genuine, and to brand them with the name of malingerer was both cruel and unjust. Finally the President dealt with the prevention of malingering, and made the following suggestions: (1) the appointment of independent medical referees of wide experience; (2) medical assessors to sit with the arbitrators or county court judges to interpret medical evidence; (3) a system of organised lay inspection and visitation; (4) compulsory detention in hospital of doubtful cases; (5) a time limit to functional illnesses; (6) periodical medical examination of suspected cases by independent practitioners; and (7) some system of registration by which the benefits of claimants from all sources could be made known.

During the evening cases were shown by Mr. N. BISHOP HARMAN, and the meeting closed with a vote of thanks to the President for his interesting and opportune address.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Oct. 3rd. Dr. David Ross, the new President, delivered an address on Some Mistakes in Prognosis. He urged the advisability of not giving a prognosis on seeing a patient for the first time, although one was often demanded, especially from a consultant. An absolutely hopeless prognosis should seldom be given. He doubted whether the date of demise could be fixed by anyone, illustrating the unwisdom of attempting to do so by a case of heart disease in a woman who was given three weeks to live, yet who on hearing the opinion changed her attendant, and three months later became a weekly attendant at the local theatre for about two years. Prognosis depended on a complete and careful examination leading to a scientific diagnosis. Yet the disease should not alone be considered and weighed, but the body as a whole in which it occurred. In bedridden asthenics death was not infrequently delayed though desired. Conversely, some apparently died merely because death was expected by the patient, the illness being but an excuse for the end. To illustrate recovery from the moribund state a puerperal septicæmia was cited in a young woman to whom no good from vigorous treatment resulted. Then morphia in a moderate dose was hypodermically

injected, and, to the surprise of all, sleep succeeded delirium and a gradual convalescence was followed in due course by five pregnancies. Arthritis due to pyorrhœa alveolaris was not invariably cured by the removal of the cause, but might unexpectedly increase. A case of malignant disease of the base of the bladder, seen by a consultant, in a man aged 70, was given an unfavourable prognosis, yet after treatment by ergot and calcium chloride hæmorrhage and retention of urine gradually ceased. Now, three and a half years after the diagnosis was made by the aid of the cystoscope, the man goes twice weekly to the city on business. Prognosis in pulmonary tuberculosis he considered full of difficulty, quoting a case of a young man who seemed to be dying and so to justify an unfavourable opinion. Yet he speedily improved, and is now, four and a half years from then, in active business. When honestly possible a favourable outlook should always be given because of its therapeutic effect. A bad prognosis by destroying hope and paralysing sustained effort might often bring about its own fulfilment.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Oct. 1st. Dr. J. J. Graham Brown delivered the opening lecture and took as his subject "Certain Aspects of Hemiplegia." His object was to prove that the movements regained on the paralysed side after hemiplegia were due to the re-assumption by the basal ganglia of functions possessed by them before the development of the phylogenetically recent cortex. He briefly reviewed the history of the cortex from the standpoint of comparative anatomy, tracing it from the ganoid fishes through the reptiles, birds, and lower mammals. He then showed that complete ablation of the cortex in these fishes, reptiles, birds, and lower mammals was followed by little or no effect at all, owing to the fact that in these animals the cortex was of such recent appearance that it had not taken the functions of movement and locomotion from the basal ganglia to any great extent. In man, however, most of these functions had been abrogated to itself by the cerebral cortex, although it was probable that the basal ganglia even in his case retained some of their primitive functions as far as locomotion and perception were concerned. He quoted a case of great interest that had come under his observation in which the patient who had hemianopsia was able to state in which direction an object was moved, the blind side being stimulated, although he was unable to "see" it. Dr. Brown then discussed the theories at present accepted as to the factors at work when movements return to a previously paralysed side. He could not agree with the statement that the homolateral cortex was the agent owing to the fact that movements returned after a double hemiplegia. Neither could he accept the theory that such movements were due to the direct pyramidal tract, since the fibres of this tract almost certainly decussate in the cord before passing to the cells of the anterior horn. Dr. Brown considered that the principal tracts concerned in the conduction of impulses to the paralysed side after hemiplegia were the rubro-spinal and the vestibulo-spinal.

NATIONAL ASSOCIATION FOR THE FEEBLE-MINDED.—In the council chamber of the London Guildhall on Oct. 23rd Field-Marshal Lord Methuen will preside over the annual Conference on After-Care. The Lord Mayor will open the conference at the morning session which commences at 10.45, and a paper by Sir William Chance on the Mental Deficiency Act, 1913, will follow the President's address. At the afternoon session, commencing at 2 o'clock, papers are announced by Mr. F. O. Spensley, senior medical officer at the Darenth Industrial Colony, on Occupations Inside Institutions, and by Mrs. Burgwin on Occupations Outside Institutions. There will be a discussion at each session, and work done by feeble-minded inmates at various homes and institutions will be exhibited during the day. In view of the importance of the question of the mentally defective it is expected that there will be a large gathering representative of public bodies concerned in the administration of the new Act. A report of the proceedings will be issued at the price of 1*s*.

Reviews and Notices of Books.

Surgery, its Principles and Practice. By Various Authors. Edited by WILLIAM WILLIAMS KEEN, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Vol. VI., with 519 illustrations, 22 of them being in colour. London and Philadelphia: W. B. Saunders Company. 1913. Pp. 1177. Price, cloth, 30*s*. net.

THE fifth volume of this "System of Surgery" completed the work, and that volume was published in 1909, but the time that has elapsed since then has witnessed so many advances in surgical theory and practice that the editor felt it was desirable to publish a supplementary volume, in which might be included all the latest facts in surgery. The authors of the articles in the previous volumes were therefore asked to provide the extra material, so as to bring their articles up to date; in addition, a few new sections have been added on intratracheal insufflation, the surgery of the hypophysis or pituitary gland, and the use of salvarsan in syphilis.

From the very nature of the volume as a supplement to the "System of Surgery" it follows that many of the articles are brief and, in fact, even a little scrappy, for only those points which are new are recorded; but this in no wise detracts from the value of the volume, for it is these new points which are of importance. It is somewhat invidious to select from so large a mass of material articles for special mention, but there are some which seem to us particularly valuable. The chapter on shock, by Dr. George Crile, of Cleveland, is a very useful summary of his views on this important matter, and as he has probably done more than any other surgeon to advance our knowledge of this condition, this presentation of his views is likely to prove useful. The chapter on what he has named "anoci-association" is a careful account of his methods of avoiding post-operative shock in all its forms, and will be familiar in its contents to readers of our columns. The article on fractures, by Dr. Daniel Eisendrath, of Chicago, also contains much new material.

The new chapter on the surgery of the hypophysis has been written by Dr. Dean Lewis and Dr. Allen Kanavel, of Chicago; it contains a satisfactory account of the development, the anatomy, and the histology of the gland, and its physiology, at least so far as that is known. The symptomatology connected with the pituitary body and the operative treatment which has been employed for tumours affecting it are detailed, thus forming one of the best accounts of this gland and its diseases that we have seen. Dr. George Emerson Brewer has written on the surgery of the thorax, and as this is a department of surgery in which much recent progress has been made the chapter is long. Mr. Mayo Robson's article on the surgery of the stomach certainly merits special mention, as does also the chapter on the surgery of the intestine by Dr. Weller Van Hook and Dr. Allen Kanavel, of Chicago. We should also like to draw attention to the chapter on plastic surgery by Dr. John B. Roberts, of Philadelphia.

The editor has wisely added a general index to the whole six volumes.

British Rainfall, 1912. By H. R. MILL, D.Sc., Director of the British Rainfall Organisation; assisted by CARLE SALTER. With Maps and Illustrations. London: Edward Stanford. 1913. Pp. 468. Price 10*s*.

THIS invaluable work continues to increase in scope and usefulness, the number of stations at which observations are recorded now amounting to 5272, a net increase of 198 over the figure for 1911. The grouping of stations by counties and river basins throughout the United Kingdom is now complete, and useful maps are supplied in this volume,

clearly indicating the basins and watersheds. The mean rainfall for stations in England in 1912 was 39·31 inches, being 23 per cent. above the average of the 35 years, 1875–1909; in Wales it was 56·19 inches, or 19 per cent. above the average; in Scotland it was 49·01 inches, being 11 per cent. above, and in Ireland 44·06 inches, or 8 per cent. above, the average. Within the last 32 years for which comparisons are available, two only (1882 and 1903) have been wetter than 1912 in England and Wales, or in the British Isles. In 1910, for the first time in 21 years, a wet year immediately followed a wet year, and the succession of two dry years followed by one wet year, that had been the rule in England and Wales from 1889 to 1909, broke down. Dr. Mill points out, nevertheless, that it is significant that the very wet year 1912 "falls into place in the old order, maintaining the tradition that every third year should be wetter than the two preceding." The greatest rainfall in the kingdom occurred on Snowdon (Crib Goch), where 205·17 inches were registered; in England 196·43 inches fell at the Stye, near Scafell Pikes, in Cumberland; in Scotland 178·95 inches fell at Loan, Loch Quoich; and in Ireland 106·60 inches were recorded at Gearahameen in the Gap of Dunloe. The least rainfall, 19·24 inches, was registered at Stifford (Essex). The principal feature of the year was the great rainstorm of August 25th and 26th, extending over a considerable part of East Anglia, where a fall of over 3 inches occurred in Norfolk and Suffolk and Cambridgeshire; in East Norfolk and the adjoining part of Suffolk more than 4 inches fell, while in the neighbourhood of Norwich the fall was over 7 inches, at one point (Brundall) 8·09 inches, and at another (Sprowston) 8·25 inches being recorded in these two days. This is the heaviest rainfall hitherto recorded in the British Isles, that at Seathwaite in 1897 having reached only 8·03 inches. Disastrous floods were the inevitable result, the effects of which on the public health have probably been long-continued and far-reaching. We much regret to hear of the ill-health of Dr. Mill, whose eyesight has been so much affected by the constant strain of this work that he has had to take complete rest for a considerable period. It is also regrettable to learn that, although the expenditure on the organisation amounted to £1521, the receipts only came to £1409, the considerable deficit of £112 having to be met by the honorary director himself. If municipal bodies and sanitary authorities understood the value of this organisation and its important bearing on public health questions, we cannot help thinking that more of them would give their support. Only 19 of these public bodies throughout the country subscribe to the organisation.

Syrian Anatomy, Pathology, and Therapeutics, or "The Syrian Book of Medicines." The Syriac text edited from a rare manuscript, with an English translation by E. A. WALLIS BUDGE, M.A., Litt.D. Vol. I.: Introduction, Syriac Text. Vol. II.: English Translation and Index. Oxford University Press, London, New York, Toronto, Melbourne, and Bombay: Humphrey Milford. 1913. Vol. I., pp. clxxviii.–612; Vol. II., 804. Price 42*s.* net.

THE science and art of medicine owe a heavy debt to Syrian Christianity, theologically known as Nestorianism. For it was Nestorian Christians, whether Arabs or Syrians, who in the great schools of Gundisapor and Bagdad studied and translated into Arabic or Syriac from the sixth to the ninth century A.D. the works of Hippocrates and Galen. Such students were Sergius Rish Aina, Bachtishua, and the Mesues, who were Syrians, but the greatest of the translators was Hunain, a Christian Arab, who was assisted by his nephew Hubaish. The Nestorian Church in its palmy days had an organisation which stretched from Asia Minor to China, and the Nestorian physicians were widely known and valued. We learn from Mandeville that the Great Cham of Tartary had: "Of Phisicyens Cristene 200. And of Leches that ben Cristene he hath 210. And of Leches and Phisicyens that ben Sarrazines 20, but he trusteth more in the Cristene Leches than in the Sarazines." It is almost certain that these "Cristene Leches" were Nestorians. Gundisapor was founded, as its name implies, by Sapor I. (A.D. 240–273), and he imported thither Greek physicians, who in the words of Bar Hebraeus "sowed Hippocratic medicine in the East." Thither, too, after the break up of the great medical Syrian school at Edessa, which was closed by the Emperor Zeno in 489 A.D., came various Nestorian physicians, such as Sergius of Rish Aina, who translated portions of Galen. He died about A.D. 536. The last of the great Syrian physicians was Bar Hebraeus, who died in 1286.

Syriac works on medicine are rare, and Dr. Budge has conferred a great benefit on students of historical medicine in thus laying before them a book which, as he says, is "the most important and most perfect Syrian treatise on anatomy, pathology, and therapeutics known to us." The manuscript which he had copied, and the text of which is reproduced in these volumes, was written, he considers, in the twelfth century. It is unfortunately incomplete, for the first portion commences with Chapter III. and portions in the middle and at the end are also missing. This first portion deals with anatomy, pathology, and therapeutics. The second portion deals with astrological matters, and the third, entitled "The Book of Native Medicines," is a collection of popular recipes and prescriptions evidently drawn up by "physicians" who did not adopt the Hippocratic theories which are the foundation of Section I. Dr. Budge considers that the first two sections were probably originally written in Greek, while the third "may have been written in Arabic, or Persian, or in some Syrian dialect."

Section I. is a series of lectures in which the author, whoever he was, follows the principles laid down by Hippocrates and Galen. The various portions of the body and the diseases which affect them are dealt with seriatim, commencing with the head; the last chapter, which is incomplete, begins with diseases of the kidneys. Numerous personal experiences are quoted in illustration of the principles laid down in the lectures, and the author had evidently seen many dissections performed or had dissected himself, for he constantly refers to anatomical points apparent by dissection. Also, he insists on the value of anatomical knowledge for a right diagnosis and successful treatment. Here is an illustrative case (Vol. II., p. 131): "If therefore a man knoweth from the making of dissections the sources of the nerves which come to each one of the members, this man, I say, can cure so successfully the want of feeling and the want of motion of each one of the members, even as I myself did in the case of a man who fell from a horse, and hurt the upper part of his back, and feeling was paralysed in two of his fingers and the half of a third. I ordered them to put plasters on the place which was injured, and the man was cured in a few days. And with the following fact physicians are not all acquainted that the roots of the nerves which are divided (i.e., radiate) in the skin of the hand, wherefrom cometh the power to feel, are of one kind, and that those which move the muscles are of another." The author of the "Book of Medicines" must have felt an honest pride in this case, for Galen relates an exactly similar case with the exception that his patient had fallen from his chariot and not from a horse. (De Locis Affectis, Lib. I.; see Kuhn's "Edition of Galen," Vol. VIII., p. 56 *et seq.*) It must not be imagined that the author exhibits such sound knowledge as the above in all his lectures, for, as is only natural in the state of

physiological knowledge of that time, he is inclined to treat symptoms rather than causes, of which he was necessarily more or less ignorant. But as regards nervous affections and paralyses, wherein, as we have seen, he applies correctly his anatomical and physiological knowledge, he lays down the canon (p. 143) "if a man is not able to make a diagnosis he will not be able to cure the disease properly." On the whole his lectures are far more scientific than the writings of many physicians of the thirteenth and fourteenth centuries, and there is a singular absence of the loathsome prescriptions which are so prominent a feature of later writers, even of the seventeenth century.

In addition to his translation Dr. Budge has supplied a most interesting introduction, giving a description of the MS., a *précis* of the contents of the three sections, a short historical review of ancient medicine, and a chapter dealing with the author so far as anything can be gathered from his work, which is but little. The date of the "Book of Medicines" must be as late as the second century A.D., as Galen and Sorinus (probably Soranus of Ephesus, 98–138 A.D.) are quoted. But the book is, in the main, Hippocratic, and it is one which every student of the history of medicine should study. It is published under the direction of the Royal Society of English Literature of the United Kingdom.

A Course in Normal Histology: A Guide for Practical Instruction in Histology and Microscopic Anatomy. By RUDOLPH KRAUSE, A.O. Professor of Anatomy at the University of Berlin. Translated from the German by PHILIPP J. R. SCHMAHL, M.D., New York. Part I. London: Rebman, Limited. 1913. Pp. 86. Price 5*s.* net.

THE slim volume before us, containing only 86 pages of text, is devoted to the technique of histological study. It is published separately in order that it may prove of use to others besides students of histology, affording as it does an epitome of microscopical methods.

It opens with an account of the structure and principles of the microscope itself, in which are described the properties of lenses, single and in combination, the methods of illumination adopted in modern microscopes, and the structure of the stand itself. Such terms as achromatic and apochromatic are explained, and the principles of immersion and of the construction of objectives are elucidated. A few words of advice are added as to care of these instruments, of which the cost of one suitable to a beginner is given as 300 to 400 marks (£15 to £20). The next section deals with methods of preserving specimens and with the principles of cutting and staining sections, the various fixatives being enumerated and discussed. The author speaks especially highly of corrosive sublimate, and also favourably of formalin, for this purpose. Among methods of cutting sections a good deal of space is devoted to the freezing microtome, which is evidently a favourite with the author for general purposes. The principles of staining are next set forth, the reader being introduced to mordants and lakes, to progressive and regressive staining, to basic and acid stains, and so forth, and the commoner dyes are enumerated and separately discussed, attention being directed to methods of impregnating tissues with silver or gold and to the mode of injecting organs. Finally, a few pages are devoted to mounting specimens and to measuring and drawing them when finally prepared. Professor Krause rightly lays stress on the importance of every student practising the methods here set forth and not being content to receive specimens ready prepared by a demonstrator, as well as on the value of making drawings of what is observed.

The book forms a very complete guide to histological methods, a large amount of information being compressed into a small compass. The information given is clear, succinct, and accurate. The translation is of only moderate quality, the translator being apparently not quite at home in the English language. For example, we do not usually speak of alcohol "assiduously" attracting water, or of the paraffin method of embedding tissue as the most "aggressive" (does this mean "troublesome"?). Phrases such as "a different colour than ....." "most all will be bleached" (for "almost"), "lest the cement will not adhere," are actually ungrammatical. German compound words like "chlor-calcium," "indig-white" should surely be translated by their English equivalents.

Gynæcological Diagnosis and Pathology. By A. H. F. BARBOUR, M.D. Edin., LL.D. Toronto, F.R.C.P. Edin., Lecturer on Gynæcology in the University of Edinburgh, Gynæcologist to the Edinburgh Royal Infirmary; and B. P. WATSON, M.D., F.R.C.S. Edin., Professor of Obstetrics and Gynæcology in the University of Toronto. With 8 plates and 202 figures. London and Edinburgh: William Green and Sons. 1913. Pp. 220. Price 7*s.* 6*d.* net.

IN this book the authors do not profess to give a complete account of the various conditions that constitute gynæcological pathology; their object has been rather to furnish the student with a method of study. In their opinion gynæcological teaching in the past has suffered from the fact that the student has not been led to the study of actual specimens and the results of microscopical examination. This is, however, by no means the case in all medical schools; there is, at any rate, one school within our knowledge in which systematic instruction in gynæcological pathology has been a prominent feature of the teaching for many years past. If such a defect in the teaching of gynæcology is really common, the fault lies to a large extent with the examiners in the subject, who do not require their candidates to show a knowledge of the macroscopic and microscopic anatomy of gynæcological specimens. A perusal of this book, however, will go far towards putting the student on the right path, and the large number of illustrations should prove of great value in showing him what he is to look for and observe. The book contains a straightforward and clear account of the most important pathological conditions met with by the gynæcologist.

We are glad to see that the authors have given up the old term chronic endometritis; as they point out, this is really not an inflammation of the endometrium, as the name suggests, but includes such conditions as glandular hyperplasia, hyperæmia of the stroma, fibrosis of the stroma, and thickening of the vessels. In view of this fact it is a pity that they still retain the names glandular endometritis and hæmorrhagic endometritis in the legends to the figures they give. This, however, is a minor detail in a very good book which cannot fail to be of great value to the student who honestly studies it. The section dealing with methods of diagnosis, more especially that part of it treating of physical examination, is particularly good, and the tables of the conditions to be found in the vagina and fornices on carrying out a bimanual examination should prove useful to the student.

LIBRARY TABLE.

A Laboratory Manual of Invertebrate Zoology. By GILMAN A. DREW, Ph.D., Assistant Director of the Marine Biological Laboratory, Woods Hole, Massachusetts. Second edition, revised. London and Philadelphia: W. B. Saunders Company. 1913. Pp. 213. Price 6*s.* net.—In reviewing the first edition of this book six years ago we commended the orderly manner of its arrangement and the prominence accorded to the salient points. The present edition contains descriptions for the study of a few forms and a rather simple bibliographical list that were not included in the first edition.

The number of pages has been increased with a corresponding increase of 1*s.* in the price of the book. The manual is a time saver both for teacher and student.

Woman, Marriage and Motherhood. By ELIZABETH SLOAN CHESSER, M.B. London: Cassell and Company. 1913. Pp. 287. Price 6*s.* net.—A volume with such a title naturally arouses interest. The subject is one that might have been discussed in a superficial manner, annoying to the thoughtful public, or with a wealth of learning or detail deterring to all except the expert student of sociology. Dr. Chesser has steered between the two extremes, and has been eminently successful in producing a book which will probably be widely read by the public. She has a sane, healthy outlook on social problems, on the work suitable for women, and she writes in a fluent, bright style which conceals by an appearance of ease much that is the product of wide reading and close thought. Though fearless and outspoken in her description of the danger to the community and to the individual proceeding from prostitution and venereal disease, Dr. Chesser refrains from the screeds encountered in the publications of unbalanced and emotional writers of both sexes. Dr. Chesser claims that she seeks for the sources of wrong and suffering, instead of dealing merely with the effects; hence she seeks for the cure of the social evil in the education of the boy and girl, in the care of the feebleminded, in the prevention of alcoholism, and in the amelioration of conditions of poverty. There is much that is provocative of discussion; there is much with which the social reformer would disagree. There is also much that is but theory and generalisation, but the book is one which can be read and considered with advantage to the home and to the development of the average young woman.

MISCELLANEOUS VOLUMES.

SEVERAL reports of learned societies and reprints of original communications and addresses have reached us during the month, which for reasons of space must be dealt with briefly. In some cases the works appeared originally in our columns.

Volume XVII. of *Studies from the Rockefeller Institute for Medical Research* (New York: Published by the Institute. 1913. Pp. 624) continues its collections of reprints from various scientific and medical journals of work done by the workers in the laboratory. The list is too long to enumerate, but the volume contains, among many valuable and interesting papers, the original communications of Hideyo Noguchi on the Cultivation of the Spirochætæ, and on Treponemata, papers by Simon Flexner and others on Poliomyelitis, by J. B. Murphy on the Transplantability of Malignant Tumours to the Embryos of a Foreign Species, by Alexis Carrel on Permanent Intubation of the Thoracic Aorta and on Pure Cultures of Cells, besides many papers on Physiology and Pharmacology, Chemistry and Biochemistry, and Experimental Biology. There are also many studies from the Hospital of the Rockefeller Institute in regard to Syphilis, Pneumonia, and Heart Diseases and Conditions.——*The Transactions of the Ophthalmological Society of the United Kingdom*, Vol. XXXII. (London: J. and A. Churchill. 1913. Pp. 242. Price 12*s.* 6*d.* net), contain, besides the usual official information, the communications brought before the Society during 1912–13, divided under the following heads: Discussion on Vascular and other Retinal Changes in Association with General Disease, papers by James Taylor, Louis Werner, and George Coats; Diseases of the Eyelids and Conjunctiva, papers by Angus Macnab, M. S. Mayou, C. Killick, and Leslie Paton; Diseases of the Orbit, papers by F. A. Juler, Charles Wray (2); Diseases of the Cornea, papers by Sydney Stephenson, Charles Wray (2), and A. S. Worton; Diseases of the Uveal Tract, papers by Charles Wray (2), Malcolm L. Hepburn (3), and Inglis Taylor; Diseases of the Retina, papers by A. W. Ormond (2), J. B. Lawford, and E. W. Brewerton; Diseases of the Nervous System, papers by James Taylor and Gordon Holmes (2), A. W. Ormond, E. Arthur Donnell, and J. F. Cunningham; Congenital Abnormalities, papers by E. Treacher Collins and A. C. Hudson (jointly), E. Treacher Collins, A. C. Hudson (2); Glaucoma, papers by E. Treacher Collins, Arnold Lawson; Muscles and Refraction, papers by N. Bishop Harman, Ernest E. Maddox, E. W. Brewerton, H. B. Grimsdale and C. J. Hope Gunning.——*The Proceedings of the Chelsea Clinical Society*, Vol. III. (London: *The Medical Magazine*. 1913. Pp. 124), are edited for the council by J. FOSTER PALMER. Besides the usual official information they contain the following papers: Ionisation or Cataphoresis, by Campbell Boyd; the Treatment of Phthisis by the Induction of an Artificial Pneumothorax, by Leonard Colebrook; Diseases of the Skin in Relation to Cardiovascular Disturbances, by David Walsh; the Position of Salvarsan in Therapeutics, by H. Wansey Bayly; the Diagnosis, Prognosis, and Treatment of Neurasthenia, by J. S. Risien Russell; the Nature and Treatment of Neurasthenia, by Gordon Holmes; Puberty and the Menopause in their Bearing on Neurasthenia, by H. Macnaughton-Jones; Neurasthenia in Relation to Internal Secretions, by Leonard Williams; Neurasthenia in Relation to Eye-strain, by Ernest Clarke; the Work of a Tuberculin Dispensary, by Vivian B. Orr; the Use of Tuberculin in Diagnosis and Treatment, by J. H. Halls Dally; and the Preparation and Standardisation of Tuberculins, by Frank Curry. Several of these papers were published in our columns.——The *St. Thomas's Hospital Reports*, Vol. XL. (London: J. and A. Churchill. 1913. Pp. 217. Price 8*s.* 6*d.* net), are edited by Dr. J. J. PERKINS and Mr. C. A. BALLANCE. They contain for the most part an analysis of the practice of the hospital in its various departments. To these is added the Salter Research Report, 1911: On the Action of Certain Drugs, Toxic Bodies, Toxins, and Micro-organisms on the Fragility of the Red Blood Corpuscles of Man and Animals, by W. W. C. Topley, M.B. Cantab., M.R.C.P. Lond.——We have also received Vol. XXXI. of the *Transactions of the Royal Academy of Medicine in Ireland* (Dublin: John Falconer; London: Baillière, Tindall, and Cox; Edinburgh: James Thin; Bristol: John Wright and Co. 1913. Pp. 498), edited by J. ALFRED SCOTT, M.A., M.D., F.R.C.S.I. The Proceedings of this Academy are reported in abstract in our columns.——We have also received bound copies of two lectures: the Bradshaw lecture of Dr. DAVID BRIDGE LEES on the *Diagnosis of Incipient Pulmonary Tuberculosis* (London: H. K. Lewis. Price 5*s.*), published in THE LANCET of Nov. 9th, 1912, and commented on in a leading article in that issue; and the Samuel Hyde Memorial Lectures, by Dr. WILLIAM GORDON, on *The Place of Climatology in Medicine* (London: H. K. Lewis. 1913. Pp. 62. Price 3*s.* 6*d.*), which appeared in our columns on June 14th and 21st, 1913.

In *A Romance of Filey in the Days of Cromwell* (London: John Long, Limited. Pp. 63), "CAN POINT" tells in the iambic tetrameter of Sir Walter Scott the love story of a noble hunchback for the Lady Sylvia. The author is a medical man.——Few medical men have the time, even if they have the mood or capacity, to work out in literary form such visions of the future as Dr. W. WINSLOW HALL foreshadows in *The Peacemaker, a Retrospective Forecast* (London: A. C. Fifield. 1913. Pp. 63. Price 1*s.* net). The book is in the form of a drama in three acts, with intercanticles. The characters represent personifications of the nations, and Dr. Hall reiterates the teachings of self-effacing love inculcated by all the great religions. The ideal set forth is doubtless an eminently desirable one, but we find little evidence that human nature has yet evolved to a sufficiently high plane to render it attainable. The author's vocabulary is sometimes astonishing.

JOURNALS AND MAGAZINES.

L'Hygiène.—The September number of this admirable illustrated journal (MM. Manzi Toyant et Cie., 24 Boulevard des Capucines, Paris) contains a very interesting article by Dr. Horace Bianchon, entitled "Les Dispensaires d'Hygiène Sociale," in which he deplores the ravages of tuberculosis in France, and maintains the absolute necessity of founding dispensaries at once for its prevention. An anonymous author, above the signature "XXX," contributes an interesting description of the epidemic of typhoid fever in Avignon last year. Dr. Linossier writes with a clever blend of the scientific and popular spirit upon what he terms alimentary anaphylaxis; Dr. Maurice de Fleury, Dr. Rochu-Mery, and Dr. Henri Meurisse are among the other contributors. M. Philéas Gilbert contributes the usual article on the cuisine of the month.

The American Journal of Tropical Diseases and Preventive Medicine. New Orleans: The American Journal of Tropical Diseases Company, Limited. Subscription (countries in the Postal Union), $2.50 a year; single copies, 20 cents.—We have received the August and September numbers (Vol. I., Nos. 2 and 3) of this new periodical, edited by Dr. Creighton Wellman, which is the official organ of the American Society of Tropical Medicine. We commented in THE LANCET of August 23rd, p. 579, on an article that appeared in the first number. The numbers now before us consist largely of papers read before the last meeting of the association. In the August number Dr. Victor G. Heiser writes on Further Experiences with Beri-beri in the Philippine Islands; Major Weston P. Chamberlain, U.S. Army Medical Corps, on the Character of the Rice which Prevents Beri-beri and the Manner in which it is Milled; Dr. Creighton Wellman and Dr. C. C. Bass on Polyneuritis Gallinarum caused by Different Foodstuffs, with Special Reference to the Effect of Commercial Rice Coating on Neuritis Production, in which the authors arrive at the final conclusion, as the result of a series of experiments, that "there is more argument against the sale of these common articles of diet, sago, Irish potatoes, and corn starch, than there is against the sale of rice, 'polished' or 'unpolished,' milled or undermilled"; Dr. Carl Lovelace on Peripheral Neuritis in the Amazon Valley; Dr. Bailey K. Ashford on Sprue in Porto Rico and the Results of Treatment by Yellowed Santonin, in which the conclusion is arrived at that santonin does not seem to be superior to a carefully supervised diet, especially a milk diet; and Dr. Juan Guiteras on the White Race and the Tropics. In the September number Major Eugene R. Whitmore, U.S. Army Medical Corps, discusses Free-living and Parasitic Amœbæ and their Relation to Dysentery; Edward O. Jordan, Ph.D., writes on Disease Carriers among School Children (a paper read before the International Congress on School Hygiene, Buffalo, September, 1913); Frederick Knab on Anopheles and Malaria; Dr. Parker Hitchens on Serums and Vaccines in the Prevention and Treatment of Undulant Fever; Dr. Charles C. Bass and Dr. Foster M. Johns on the Cultivation of Malarial Plasmodia (Plasmodium Falciparum) in Vitro in the Blood of a Diabetic without the Addition of Dextrose, in which it is shown that whatever influence dextrose—and this seems to be essential for the cultivation of malarial plasmodia in vitro—has on such cultures may also be produced by the blood sugar of diabetes. A curious case is recorded of a diabetic of three years' standing who last July contracted malaria in Central America. The fever and malaria persisted in this case in spite of sufficient quinine to control the usual case of malaria. The authors suggest that this may have been influenced by the increased amount of dextrose in the blood stream.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

(1) RHODALZID; (2) PERUGEN; (3) VESICÆSAN; AND (4) SILVER NITRATE AMPOULES.

(CHEMISCHE FABRIK REISHOLZ, AGENTS, REITMEYER AND CO., 63, CRUTCHED FRIARS, LONDON, E.C.)

1. Rhodalzid is a combination of the thiocyanate group with albumin, which it is suggested replaces the ordinary thiocyanates with therapeutic advantage. The thiocyanates have been used in medical practice for the acute pains of tabes and also in arterio-sclerosis and migraine. They appear, in fact, to have a definite analgesic action, but some observers have stated that the inorganic thiocyanates or sulpho-cyanides have a disturbing effect upon the alimentary tract and rhodalzid is the outcome of these observations. It is, in short, an organic thiocyanate which is said to be free from secondary effects. There is a suggestion that the presence of thiocyanate in the saliva is opposed to caries, and the thiocyanates have been used in caries and stomatitis. Rhodalzid is hygroscopic, the tablets submitted to us being quite soft, but apparently this does not lead to decomposition. Rhodalzid strikes a fine red chestnut colour with ferric salts. The tablets yielded no mineral salts on incineration, so we may conclude that metallic thiocyanates were absent. 2. Perugen is described as a synthetic balsam of Peru. It contains at least 60 per cent. of cinnamein, the normal constituent of the natural product. It is employed in skin diseases depending upon the attack of a parasite. It has been used particularly in scabies and as an antiseptic for wounds. In these applications, however, the natural product has been known to produce disturbance of the kidney function, albumin appearing in the urine. For perugen it is definitely claimed that no such action occurs. 3. Vesicæsan is prepared from the leaves of *uva ursi*, the decoction having had some repute in the treatment of chronic cystitis and vesical catarrh. The leaves contain a definite crystalline principle arbutin which is a glucoside. Vesicæsan is prepared by a special process of extraction by which certain principles which are irritating in the digestive tract or the kidney are eliminated. In addition, vesicæsan is much more acceptable to the palate than the ordinary infusion of bearberry leaves. 4. We have examined the contents of the silver nitrate ampoules, the solution being prepared at a definite strength suitable for application as a prophylactic in ophthalmological practice. The solution being hermetically sealed keeps the desired strength. With the ampoule is supplied a pipette which is plugged loosely at its pointed end with a wad of cotton-wool. The cotton-wool projects somewhat, so that in applying the drops to the eye any contact of the glass edge of the pipette ought to be avoided.

BAD EMS SALTS.

(HERTZ AND CO., 9, MINCING-LANE, LONDON, E.C.)

The salts of the thermal springs at Ems in Hessen-Nassau, Germany, are quite simple in character. They consist principally of sodium bicarbonate and sodium chloride. Other salts occur, but in smaller quantities. Routine treatment at the spa has shown the value of these waters chiefly in catarrhal affections of the mucous membranes. Further, the decided alkalinity of the water probably accounts for the favourable results recorded in rheumatism and urinary disorders. A recent development has taken place at Ems in the installation of a plant which evaporates the waters in vacuo and produces a powder containing the active salts of the natural waters. We have examined a sample of this

powder and find that it contains the chief constituents of the natural water, and in the same proportions. Thus, we found it contained 65·52 per cent. of bicarbonate of soda and 30·42 per cent. of sodium chloride. Magnesium and calcium salts, however, which we found present in the bottle of water, were absent in the powder, probably because these naturally separate on concentration. Their presence, however, is probably not important. It is interesting to note that in the powder the sodium salt occurred as a bicarbonate and not as normal carbonate. The water we examined gave a total mineral residue of 2·94 grammes per litre. This contained 1·75 grammes of carbonate of soda, 1·05 grammes of sodium chloride, 0·13 gramme of calcium carbonate, and 0·068 gramme of magnesium carbonate. We also examined some pastilles which are useful for throat medication. These contained the same salts as the natural water. The water is more effective therapeutically when taken warm. The temperature of the waters at the source is from 83° to 135° F. They are probably radio-active.

PNEUMOSAN.

(THE PNEUMOSAN CHEMISCHE FABRIK, 157, GREAT PORTLAND-STREET, LONDON, W.)

Pneumosan is described as an amyl-thiotrimethylamine compound. The justification of this title appears to be in the fact that amongst its important constituents are methylene blue, which chemically is tetra-methyl thionine hydrochloride, and valeric acid—the oxidation product of amyl alcohol. A third constituent, according to our analysis, is codeine phosphate. The pharmacology of these three constituents is well known. The combination has been tried as an injection in tuberculosis with results which are reported with a confidence that has attracted attention. Reports have appeared which apparently show that in the early stages of tuberculosis the administration of pneumosan is followed by a marked improvement in the condition of the patient. An abatement of fever is recorded, and rise in the opsonic index is said to take place. Reference is made to the value of the valeric acid in the product as influencing a favourable action over the nervous system. The preparation has been analysed and the results have been communicated to us. Our own examination bears out the statements in regard to the principal constituents. We found, for example, that on evaporation of the dark blue fluid a residue was obtained amounting to 1·70 per cent. This on incineration yielded a mineral residue equal to 0·11 per cent. On distillation valeric acid was obtained in the distillate amounting to 0·765 per cent. The same figure was obtained when pneumosan was extracted with ether, the ether taking out apparently the whole of the valeric acid. Further examination showed the presence of codeine combined with phosphoric acid. We found present codeine 1·427 per cent. and phosphoric acid 0·38 per cent. The physician will be helped in his opinion as to the therapeutic claims made for this preparation by a knowledge of its constituents, and we are glad of the opportunity of bringing this information to his notice. A note on pneumosan as a remedy for tuberculosis appeared in our columns of March 30th, 1912, and further reports have appeared in other publications.

ZYMINE PEPTONISING POWDER.

(FAIRCHILD BROS. AND FOSTER, ALBERT CHAMBERS, 64-65, HOLBORN VIADUCT, LONDON, E.C.)

The enzyme products of this firm are well known. There has recently been issued a smaller-sized package of the zymine peptonising powder which readily effects, amongst other things, the peptonisation of milk. The reduced size adds to the convenience in practical use of this agent. We have tried it in regard to the peptonisation of milk and the digestion of starch, and in both cases the results were satisfactory. It rapidly liquefied starch jelly, and ultimately converted it into sugar.

(1) "TABLOID" LYMPHATIC GLAND; (2) "KEPLER" MALT EXTRACT WITH GLYCEROPHOSPHATES; AND (3) "TABLOID" ADJUSTABLE HEAD DRESSING

(MESSRS. BURROUGHS WELLCOME AND CO., SNOW HILL-BUILDINGS, LONDON, E.C.)

1. The tabloid lymphatic gland supplies a convenient means of administering this organo-therapeutic substance. Treatment with lymphatic gland substance is based upon the view that when tonsillar enlargement occurs it is an attempt on the part of nature to increase the lymphoid tissue of the body. The trials in cases of enlarged tonsils and adenoids in children indicate that the snoring has been improved and the tonsils diminished in size. 2. Kepler malt extract is an excellent vehicle for the glycerophosphates which comprise the salts of calcium, magnesium, potassium and sodium. The extract shows a remarkable digestive activity on farinaceous foods, and we had no difficulty in confirming the presence of the glycerophosphates enumerated. 3. We have already described a tabloid adjustable head dressing the convenience of which threatens to replace the old roller bandage. The dressing is now issued in a large size, and therefore supplies a covering in circumstances where the primary dressings require increased accommodation. The numerous useful applications of this head dressing will easily occur to the surgeon. The dressing is compressed, and so far justifies its description of a tabloid. At any rate, when packed it goes easily into the waistcoat pocket.

MALT EXTRACT WITH HÆMOGLOBIN.

(A. WANDER, LIMITED, 1 AND 3, LEONARD-STREET, FINSBURY, LONDON, E.C.)

This is a crystalline preparation comprising the extractives of malt, which include its active digestive principle. It is reinforced with hæmoglobin. We found that on boiling a solution of the preparation a coagulation occurs which carries with it the colouring matter. Viewed with the spectroscope the solution showed the characteristic absorption lines of hæmoglobin. The combination appears to be a useful one in cases where the administration of assimilable iron is indicated. The preparation is palatable and is both a nutrient and hæmatinic.

CYSTOPURIN.

(A. WÜLFING AND CO., 12, CHENIES-STREET, LONDON, W.C.)

Cystopurin is a compound of sodium acetate with hexamethylene-tetramine, the latter now being accepted as a useful bactericide for the urinary tract. The presence of sodium acetate is regarded as assisting the action. Sodium acetate, of course, is changed into the carbonate, and so favours an alkaline condition. The sodium salt is also diuretic. Cystopurin was favourably mentioned in a recent communication to our columns on tuberculosis of the urinary tract, by Mr. J. Howell Evans.[1]

THE AYMARD PATENT MILK STERILISER.

(THE AYMARD PATENT MILK STERILIZER COMPANY, LIMITED, ST. MATTHEW'S WORKS, IPSWICH.)

The principle upon which the effective action of this milk steriliser is based is quite simple. The apparatus consists of a container for the milk, beneath which is a boiler generating steam which travels through a jacketed space around the milk chamber. The milk is therefore not in direct contact with the source of heat; burning is avoided and the taste of the milk is not altered. The temperature obtained is, of course, that of steam at the existing atmospheric pressure, the milk chamber acting as a condenser. Following the directions supplied, confidence may be felt that sterilisation is accomplished by this apparatus.

[1] THE LANCET, August 2nd, 1913, p. 273.

THE LANCET.

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Education and Examination.

WE publish again this week certain selected addresses delivered at the commencement of the October session in the various medical schools, and among those addresses is one by Sir WILLIAM OSLER which, like every public saying of its distinguished author, merits close attention by those interested in the progress of the medical profession. Sir WILLIAM OSLER, it will be seen, speaks throughout as a frank critic of examinations; he finds overrated both their importance as a test to those who pass them, and their value as machinery for educational purposes. He does not go so far as some have done and suggest that examinations should be abolished, for he is a practical man, and realises that the public, who depend on our professional ministrations, should have a guarantee, itself open to test, that those on whom they rely for medical service are educated up to a certain standard. Examinations form the ready way in which it is possible for those responsible for the medical education of the country to make out a list of practitioners who can be publicly hall-marked as educated, but to allow this is not to allow that in the multiplicity of examinations lies the safety of the public or the elevation of the medical profession to any exalted academic level. We have before now expressed in these columns our entire approval of a motion introduced at the General Medical Council many years ago by that fine and clear thinker, Mr. T. PRIDGIN TEALE, which ran as follows: "That the present system of accumulated examinations and the enormous increase in the number of rejections resulting from it are not only unjust to the student, but damaging to medical education." The figures which Mr. TEALE depended upon in support of this motion indicated that the percentage of rejections at medical examinations had progressively risen from 12·4 in 1861, to 22·2 in 1876, to 34·8 in 1886, and to 41·9 in 1895, while, as Sir WILLIAM OSLER shows in the address which we publish to-day, the five years 1908-12 display a continuation of this significant movement. There can be no two opinions in the matter here—something is wrong when we regard such a percentage of rejections at examinations as the normal outcome of our methods of education.

The statutory period of studentship in medicine in this country is five years, and for practical purposes the time taken by the student to pass his necessary examinations is now seven years. Seven years is a large slab of any man's life, and when those years are taken between such ages as 19 and 26 they cover the flower of adolescence. Stronger in body perhaps, and for certain both richer in learning and more discreet in council, will the young man become, but never again for him can the days have quite the radiancy and flavour of youth. It is no light thing, therefore, that this precious period should in the case of our medical students be too often a period of muddle and mortification. Seven years is not too long a time in which to acquire a working knowledge of the medical profession; but, again, in the absence of any definition as to what constitutes a working knowledge of the medical profession, five years may not be too short a time. It is admitted now on all hands that the medical man must remain a student to the end of his days, and no medical men are happier than those who recognise this fact and who steadily maintain themselves in touch with their profession by attendance at post-graduate classes or by an interchange of views at scientific debates, where personal experiences can be collated and the latest general principles can be adopted with some fulness of knowledge. If the medical man is thus happy in adding to his store of wisdom, why, it may be asked, condole with the medical student because his time spent in adding to his store of wisdom grows longer? The point is that the medical student and the post-graduate student are not in the least comparable persons, while in speaking of the modern medical student we are speaking of a young man for whom it is probable that somewhere in his lengthy career of examinations mortification awaits him. The post-graduate student continues to work, as opportunities serve him, at the practical side of his profession, either in the direction which has for him the chief scientific appeal or that in which he feels that his knowledge particularly requires supplementing. In either case he works *con amore* along lines agreeable to himself, in order to satisfy his conscience, to realise his ideals, and perhaps to make as certain as possible of professional success of a desired sort. The medical student in entering for his first examination may be single-minded in his desire to get forward and to learn more. The rejected student works in no such spirit at all, and a vast number of our students are rejected at least once. In many instances there is with the rejected student an abiding sense of injustice. Of course, we know that very often that sense of injustice is not justified; on the other hand, it must be admitted that the element of chance plays a considerable part in the results of examinations, both pass examinations as well as competitive. In every final examination in medicine we may be fairly certain that some 15 per cent. of the candidates upon re-examination would change their places from rejected to passed, and *vice versâ*. Professor EDGEWORTH'S well-known figures in respect of examinations for the Indian Civil Service, the Home Civil Service, and the Army may be recalled. In these examinations he found in an ingenious manner the element of luck to be such that in any given examination the chances of displacement upon re-examination would amount to one-seventh. Again, there is a feeling, sometimes just and sometimes not, among many students that, although they do not happen to be able to satisfy an examiner with the answer expected, often the question is of the sort that in real life would have had no terrors, inasmuch as in real life either there would be time to clear up the point by consultation of books, or it would not matter in the least whether the point was cleared up.

Students who have grounds for considering that the element of luck is too high, or who feel that an examiner is trying to pose them rather than to ascertain the value of what they know, do not face re-examination with any great relish, and some are beaten before the fight begins.

What is the lesson to be drawn from the admitted fact that our system of examinations, however necessary and however honestly planned, may have a blighting effect upon what is best in the medical education of many of our students, leading too often to a waste of the time of both teacher and taught? Dr. WILLIAM HUNTER, of whose annual report as dean of the Charing Cross Medical School a large portion is published in our present issue, supplies interesting material for an answer, and the answer is coördination. Dr. HUNTER is speaking of London only, and the education of the London medical student is in a critical position, as we await anxiously the new scheme under which the University of London may prove itself a more vital and practical force in the education of our students, making full use of the splendid pathological material of the metropolis and of our unrivalled system of clinical training. But in London there are educated a very large percentage of all English medical students and not a few of those who receive their degrees or diplomas from other educational centres, and if order is introduced into the education of the London medical student we shall have taken a great step towards removing the general conditions of waste and disappointment. What are really necessary at the present moment are patience and adaptability. If with as little friction and delay as possible a new scheme comes into being for the education of the London student possessing the admitted virtues of our present system, but having also a simplicity, economy, and effectiveness which results show to be lacking now, much indeed will have been accomplished. Those who are providing for the country with great zeal and self-sacrifice the national training of our young medical men are not of one mind in detail with regard to a metropolitan university; but as all alike deplore the multiplicity of examinations for which the student has to sit, and the inevitable interference with the smoothness of the curriculum which is caused by the scandalous number of rejections, we believe that differences of opinion, now so acute, may greatly disappear during the work of reconstruction. London should be able to show the way to employ clinical opportunities and pathological resources in the education of the medical student in such a manner as to transform examinations from vexatious and extravagant breakdowns into reasonable halts upon a well-planned journey.

The Rag Flock Act, 1911.

SINCE the measure known as the Rag Flock Act was passed in 1911 experience has shown that unless certain amendments are shortly introduced its salutary intentions may be defeated. The main purpose of the Act was to prevent the use of insanitary material, whether it was made from rags or anything else, in the manufacture of flock for bedding. It was an Act primarily designed to secure clean materials for the mattress on which we sleep, and no one is found to say that this is not an important matter. Judging from the attitude of some magistrates, however, there seems to be a disposition on their part to treat offences under the Act in a trivial way, and this is not in accord with the best traditions. Such an attitude may arise from an ignorance of the real importance of the aim of the Act or because the Act allows a freedom of construction which enables clear cases of offence to escape. It appears, according to the views of at any rate one sanitary authority—viz., the health committee of the corporation of Bradford—that the Act requires strengthening in regard to working definitions. The members of this committee have made, it seems to us, some trenchant suggestions in this direction. They have asked, for example, for a definition of the expression in the Act "flock manufactured from rags" so that it may include flocks whether made directly or indirectly from rags or from some one or more intermediate processes in the conversion of rags into shoddy cloth, as well as flocks developed in the milling, raising, cropping, and other processes which take place after shoddy cloth has been woven. They suggest, also, that the word "rags" shall include all fabrics whatsoever, whether woven or felted, which are admittedly destined for conversion into flock. These recommendations to the Local Government Board, made with the view of securing an amendment of the Act, mean that there are deficiencies in the measure which permit a limited application of its provisions, or which lead to a failure to secure a conviction when an obvious breach of sanitary requirements has been committed.

We learn also that quite recently a practice has arisen which, while satisfying the Act in regard to the statutory limit of chlorine capable of being washed out of rags, may leave in the material undesirable solids and dirt. It may be remembered that the Act states that flock may be passed as having been satisfactorily cleaned or washed which does not yield to distilled water more than 10 milligrammes of chlorine in one litre of wash prepared on well-regulated lines. This test is based, of course, upon the probable presence of soluble impurities in the fabric, but leaves untouched the question of insoluble impurities. The Act would seem, in short, to provide for soaking the material, but not for the thorough washing of it, using that word in the sense of removing all impurities detachable by a washable process. It follows that a mere soaking of flock may fulfil the requirements of the Act in regard, that is, to the chlorine standard (soluble impurities), but the process still leaves the fabric unclean, dirt of all kinds and much objectionable matter not being eliminated by the ordinary process of soaking. The matter is simple in the case of linen. It is obvious that the mere soaking of a shirt in water will not render it clean or presentable, thorough washing is required to take away all evidence of soiling. That is what the Rag Flock Act should ensure in the case of rags intended for bedding if it is to succeed at all under the dignified title of a sanitary reform. On the face of it, it is difficult to suggest how the question of mechanical scouring, the removal of dirt and so forth, can be controlled by laying down a standard unless that control be an actual experimental washing itself. Possibly it may be

practicable to add to the efficiency of the test by requiring, in addition to a limited yield of chlorine, a minimum of colouring material or of attached impurities which are capable of being removed by the ordinary process of washing. The wash water could be examined both for chlorine and suspended impurities, and a minimum allowance imposed in the latter case as well as in the former. It is quite clear that if an efficient washing process has been conducted by the rag flock manufacturer he will have nothing to fear when such a test is carried out upon his material, for thorough washing would exhaust it of those very impurities which the sanitary officer would look for when an examination is made. The whole matter is of the first importance, and we beg to call the attention of all sanitary authorities to the existing situation.

Annotations.

"Ne quid nimis."

RELIGION AND SCIENCE.

UNDER the presidency of the Bishop of Winchester the fifty-third annual Church Congress was held last week at Southampton. The programme challenged criticism by its boldness and novelty. Old questions were set aside and attention was centred upon the work of the Church in the life of to-day, faced as it is with the changes which must inevitably arise in days of progress and development. The deliberations, which were imbued with modern spirit, were concerned with such urgent social questions as the women's movement in its larger aspect, rural betterment, the ethics of property, and (as was appropriate in Southampton, a large port of exit to the great world) the difficult problem of the relation between civilised and backward races. The majority of the speeches on the position of woman indicated the opinion that her first duty was the maintenance and perpetuation of life, that a larger share in social service should be given to her, and that there should be increasing coöperation in public affairs which fall peculiarly within her influence between men and women; little direct allusion was made to the question of female suffrage. The problem of the races, which means much to Great Britain, the world's first colonising force, was discussed from many standpoints. The note of the Congress was that the advances of anthropological science would assist in the foundation of fruitful and successful government. It was felt that the control of backward races by a civilised Power must be "full, complete, and exercised in the light of day," and that although it seemed unwise to force education on people who did not want it, yet all nations and individuals should be given every opportunity for development. The Congress was in many respects a distinctive one and full of hope. It is too early to estimate its real value. But it has done much to establish high ideals, to help forward the cause of social progress and reform, and to forge new and closer links between the Church and the affairs of our collective life. At the Church Congress, as at the recent meeting of the British Association, it became obvious that the antagonism between religion and science is practically in abeyance. Science is, as Sir Oliver Lodge said in his stimulating Presidential Address to the British Association, an affair of the intellect—"it examines everything in the cold light of reason, and that is its strength." But the strength of science is much tried by the vast processes of examination that it now has to carry on, and the faculty of imagination is increasingly employed in these processes. As a consequence a healthy position has been reached in which the faith of the religious man can be respected by earnest scientific workers, while the huge undertakings of science can be supported by religious believers, who see in the stupendous facts revealed to them no contradiction to their beliefs and hopes.

SEPTEMBER AT HOME AND ABROAD.

UNLIKE August, which was cool for the time of year over the greater part of this country, September's temperature was at least equal to the normal, and over a large portion of the kingdom a little above it. In the matter of sunshine, too, it was relatively more generous than the preceding month, although it still fell somewhat short of the average, and was dull when compared with some of the brightest of past Septembers. Like both July and August, its rainfall was below the average in most localities, but not in such a marked degree. In the metropolitan area, as represented by Kew, the mean maximum temperature was 66°, or rather more than a degree above the average, while the mean minimum was 50°, also a trifle more than a degree above. The warmest and brightest weather came during the last week, when, under the influence of a wind current from the south, the sheltered thermometer rose to 70° or above on five days, and only descended to about 55° at night. The first week was the most sunless ever recorded in September, and its remarkable dulness has been seldom surpassed even in the months, November–January. At Kew the first seven days gave a total sunshine of only 8·6 hours, and at Bath 8·3 hours, but when the dense canopy of cloud had once been broken, it never formed again for more than a day, and most of the remainder of the month was fairly bright. The aggregate number of hours at Kew was 127, against an average of 141. As many as 51 hours of the 127 were recorded during the last seven days. Rain fell on 12 days, and yielded a total of 1·73 in., a figure nearly a quarter of an inch below the average. At Bath the mean temperature was slightly higher both during the day and night than at Kew, while the sunshine was practically the same. The rainfall, on the contrary, was much heavier, owing chiefly to a sharp thunderstorm on the 5th. The aggregate figure was as high as 3·17 in., or 0·95 in. above the normal. Further north the mean temperature decreased. At Nottingham the mean maximum and minimum values were 65° and 48·5°, at Harrogate 62° and 49°, and at Buxton 60·5° and 46·6°. Both at Nottingham and Harrogate the total sunshine was about ten hours less than at Kew and Bath, but at Buxton it was about 20 hours less. At Buxton, although rain fell on no less than 18 days, the total fall was no more than 1·83 in., or 2·34 in. below the normal. On the south coast of England the mean maximum temperature differed little from that in London, but the mean minimum was appreciably higher. At Brighton the mean night was nearly 4° warmer than at Kew, and at Bournemouth 2° warmer. The weather was also much more sunny; at Brighton the total sunshine was more than an hour a day above that at Kew. The extreme south-west of England had rather cooler days and milder nights than the rest of southern England, and also more rain and less sunshine, but at Jersey the month was warmer, brighter, and drier than on any part of the mainland of this country. The mean maximum temperature equalled 68° and the mean minimum 55°, while the sun shone during 191 hours, exceeding the average by five hours, and rain fell on only nine days, yielding the small total of 0·65 in. The Continental weather was normally hot and dry in Southern Europe, the temperature rising to between 80° and 90° in Italy and the Spanish Peninsula during the earlier half of the month, and subsequently to between 70° and 80°. In France the heat was not, as a rule, very

great, and the general condition rather variable, with spells of showery, thundery weather, while in the central countries, where the greater part of the period was dry, the decrease in warmth during the latter half was very noticeable. At Paris the mean maximum temperature was 69°, or 3° higher than in London, and at Brussels 68°, but at Berlin it was only 65°. The mean minimum of the nights was nearly the same in all three capitals, being 49° at Brussels and 51° at Berlin and Paris. At Berlin there were only seven days with rain, and the total was no more than 1·66 in., and at Brussels eight days, with a total of 1·49 in. Paris, however, was rather less dry, rain falling on ten days, and giving an aggregate of 1·78 in. Paris was, relatively, more sunny than during August, a total number of hours equal to a little more than six hours daily being registered. In London the figure was little more than four hours daily. The greatest shade heat at Paris was 78° on the 3rd, a figure that was equalled in some parts of London towards the end of the month, but in the French capital the thermometer reached or rose beyond 70° on as many as 14 days. Brussels also had a temperature of 70° or above on 14 days, but at Berlin there were only five readings as high, as in London (Kew). The deluge that accompanied the thunderstorms in the extreme south of France on the 29th was comparatively local, but was extraordinary for the tremendous quantity of water falling in a short time. Over many thousands of acres the amount appears to have varied between 4 in. and 7 in., all of which fell within 24 hours.

THE ETIOLOGY OF RELAPSE IN MALARIAL INFECTIONS.

IT has been asserted by certain experts quite recently that while our knowledge of the malarial parasite, its morphology, mode of transmission, treatment, and prophylaxis is fairly complete, the etiology of relapse in this malady has not yet been satisfactorily determined. This is the more to be regretted since there are good grounds for believing that relapses in malaria lead often to more serious consequences than do primary attacks. The Department of Sanitation of the Isthmian Canal Commission began two years ago an inquiry into the various predisposing causes of relapse in malaria, with the object of verifying or excluding the several hypotheses at present current concerning the etiology of relapse, as well as to ascertain the best methods of prophylaxis and treatment against it. The material thus collected has not yet been fully dealt with, but meanwhile Dr. W. M. James, physician to the Ancon Hospital, has discussed in the *Journal of Infectious Diseases* the various hypotheses put forward. His article is entitled "Notes on the Etiology of Relapse in Malarial Infections," and in it he directs attention more particularly to the two principal hypotheses advanced on this subject, both of them having one factor in common—namely, that relapse is due to the renewal of the asexual cycle of the malarial parasite to a degree when clinical symptoms become observable, and a resistance of the latent parasites, whatever may be their form, to quinine. In summarising his views, Dr. James says that if the hypothesis be accepted that the asexual cycle alone is the cause of relapse, and that under certain conditions there is established a relative immunity against quinine, an explanation is afforded of all the facts associated with the etiology of this condition. Relapse, he goes on to say, is one of the most common factors in malarial infection, and the asexual cycle is that phase of the parasites found to be most frequently connected with the primary infection and relapse. Relapse follows often upon the so-called spontaneous cure of malaria because the asexual cycle in such instances often persists in numbers which can be detected by the thick-film method. Infections treated insufficiently with small doses of quinine will in all probability relapse, because the parasites of the asexual cycle in the spleen and marrow are very slightly, if at all, affected thereby. On the other hand, relapse is less likely to occur when the infection is promptly and vigorously treated, for the older the asexual cycle the more resistant to quinine does it become. When a relapse occurs with manifestation of parasites in the peripheral blood during the administration of quinine by the mouth in sufficient doses, it is evident that there must be faulty absorption of the drug, and that the method of medication ought to be altered. The potential of vitality of the asexual generation is not unlimited, and owing to this, if death does not supervene in the course of a malarial infection, the infection itself will in time die out, but often not until it has done irreparable injury to the patient. It is easier to eradicate an infection in persons who are otherwise in good health, because in these cases the natural protective forces of the body aid the action of quinine. In Dr. James's opinion, the practical importance of the above hypothesis lies in the value it has as a guide to the treatment of malaria. Small doses of quinine even in the mildest infections serve only to render the asexual cycle relatively immune, so that larger doses, which if they had been given early in the attack might have exterminated the parasites, are at a later stage without effect. After numerous experiments with varying doses of quinine Dr. James, in conjunction with his colleague, Dr. W. E. Deeks, of the Ancon Hospital, came to the conclusion that the best method of treating malaria by quinine is to give 45 grains of the sulphate daily, dividing it into three doses, each of 15 grains. By this mode, it is contended, recurrent malaria has been practically banished from among the Americans in the Panama Canal Zone, and to a large extent among the European labourers employed on the Isthmus. But it has to be remembered that the latter are also heavily infected by syphilis, a complication which lessens the efficacy of the routine treatment of malaria until the syphilis itself has been successfully dealt with.

THE NATIONAL GAS CONGRESS AND EXHIBITION.

THERE is an extremely interesting collection of modern gas appliances on view at the National Gas Exhibition at the International Exhibition Halls, Shepherd's Bush, London, which was opened on Oct. 1st by the Lord Mayor of London in the presence of a large gathering of scientific, industrial, and municipal authorities. The exhibition remains open until Nov. 1st. The occasion commemorates the jubilee of the Institution of Gas Engineers and the centenary of public gas-supply. The exhibition reflects the enormous progress that has been made in the methods of gas manufacture and in the appliances employed for utilising gas for power, lighting, and heating purposes. The demonstrations are of an instructive and practical character. An excellent series of popular lectures has been organised which is intended to familiarise the public with the proper and economical use of gas in domestic service. We note with special interest that many of the advances demonstrated give evidence of a regard for hygienic considerations, and this is particularly so in respect of gas stoves. The models now made by the leading gas firms excite our admiration for the excellence of their design, the economy with which they deal with gas as a fuel, and the methods adopted to secure comfortable and healthy warmth for domestic purposes. There is also an incidental display of the numberless by-products obtained in gas manufacture, including ammonia compounds, synthetics, dyes, antiseptics, and so forth. It is interesting to note that medical science owes much of its impetus to the gas industry. The gas

industry supplied, for example, the early antiseptic workers with antiseptics, it furnished also a series of valuable antipyretics and anodynes, while bacteriology owes much of its advance to the aniline dyes which served to bring the organisms of disease into view and into differentiation. The exhibition, therefore, has many points of interest to medical men apart from the great public matters of efficient and healthy lighting and heating.

PERITONSILLAR ABSCESS EXTENDING DOWNWARDS AS FAR AS THE SECOND RING OF THE TRACHEA.

IN the *Boston Medical and Surgical Journal* of August 21st Dr. G. L. Richards has reported a case in which suppuration beginning in a peritonsillar abscess extended downwards as far as the second ring of the trachea. The patient was a well-nourished man, aged 42 years, who had enjoyed good health except for occasional attacks of quinsy. He went to hospital with a history of sore-throat for several days followed by difficulty in breathing and swelling of the entire left side of the face and neck. The left tonsil had been lanced on the previous day and again on the morning of admission but without relief, and the abscess had been enlarging. He was breathing with great difficulty, and there were occasional paroxysms of dyspnœa and coughing. The entire left side of the neck down to the clavicle was swollen and œdematous. Examination of the throat, which was done with difficulty, showed that the tonsil, lateral wall, and the supratonsillar area were intensely swollen. The pulse was 124 and the patient was nearly cyanotic. The skin of the neck was very tense, but no definite fluctuation could be felt. A large peritonsillar abscess was diagnosed. He was seated in a chair, the tongue was depressed, and an incision was made in the supratonsillar fossa. This caused a discharge of pus and a paroxysm of coughing. As this incision was made rather for diagnosis, it was small. An attempt was made to enlarge the opening. A gush of pus escaped, and at the same moment an inspiratory spasm, a cry, and cessation of breathing occurred. He was immediately placed on the operating-table. Unfortunately, no preparations had been made for tracheotomy, and in lifting the patient on to the table the knife was dropped on the floor and lost for the moment. A hurried call for a knife caused the assistant to bring a thin nasal chisel by mistake, and several seconds were lost before a knife was obtained. The head was placed somewhat over the edge of the table, the neck was put on the stretch, and an incision was made at the supposed site of the trachea. Much to his surprise, Dr. Richards entered, not the trachea, but an abscess. The abscess had burrowed downwards to a little below the second ring of the trachea, producing phlegmonous inflammation of the tissues of the neck, and had pushed the trachea well over to the right. While the pus was still flowing the trachea was found and quickly opened. The patient was apparently lifeless, but the pulse was still beating. Artificial respiration was performed, and after a few seconds natural respiration began and a tracheotomy tube was inserted. The peritonsillar abscess and the abscess near the trachea were then widely opened with the aid of the finger. The two were found to communicate. The patient was kept in bed with his feet about a foot higher than his head for the next three or four days, a wick being inserted around the tracheotomy tube. The temperature, which was 101·5° F. on admission, slowly fell. An abundant discharge of pus took place from the mouth and at the side of the tracheotomy tube for a few days. The tracheotomy tube was removed on the eighth day, and the patient was discharged from the hospital cured on the seventeenth day. The case illustrates the danger of allowing a peritonsillar abscess to develop. The pus probably forced its way through the fibres of the superior constrictor of the pharynx, which is in contact with the tonsil, and gained access to the prevertebral fascia. Following this fascia down the neck it came in contact with the larynx and trachea. It was an error to attempt to open such an extensive abscess without being prepared for tracheotomy.

HARD WATER AND OLD AGE.

A FEW months ago we received a communication from a lay correspondent in which he expressed his belief "that the lime in common water has much to do with bringing on old age." In an annotation entitled "Hard Water Fallacies," which appeared in our issue of June 28th, we said that the belief, although fairly common, was fatuous, pointing out that the amount of lime salts consumed in the daily diet was largely in excess of that contained in a daily allowance of the hardest water supplied to the community. In an interesting article published in another column of our present issue under the title of "Hard *versus* Soft Water," Dr. J. C. Thresh gives the results of an extended inquiry which he has made into the question of a possible relation between the hardness of water and the death-rates. His conclusion is that there is no such relation. Taking the averages for the five years (the period of his calculations) the differences between the death-rate for the area with the softest waters and the area for hardest waters is, he points out, in one instance (the metropolitan area) only 0·1 per 1000, and in the other (country towns) only 0·2 per 1000, whilst the moderately hard water areas taken together have a death-rate exceeding that of the hard water areas of from 0·1 to 0·2 per 1000. These differences he regards as so slight that only one conclusion can be deduced—namely, that the natural character of the water-supplies in this country has no effect upon the death-rates. Incidentally they confirm also a previous opinion which he expressed, that the filtered water from the sewage-polluted rivers, the Thames and Lea, is as wholesome as the water from our very deep wells and gravel springs. In 1893 the famous River Pollution Commission reported that "where the chief sanitary conditions prevail with tolerable uniformity, the rate of mortality is practically uninfluenced by the softness or hardness of the water supplied to different towns, and the average of mortality in the different water divisions varies far less than the actual mortality in the different towns of the same division." There is obviously a concordance of observations here which should place at rest the contention that an increased rate of mortality is favoured by hard water. It may be added, however, that a hard water-supply introduces enormous economic inconveniences, amongst which are the furring of the service pipes and fittings and a wastage of soap.

THE TYPE OF BACILLUS IN TUBERCULOSIS OF THE BONES AND JOINTS.

THE view that tuberculosis of the bones and joints is almost exclusively due to the human type of tubercle bacillus is emphasised in the *Deutsche Medizinische Wochenschrift* for Sept. 18th by Dr. B. Möllers, Koch's late assistant. His investigations in 12 cases of tuberculosis involving the bones and joints failed to demonstrate any but the human type of tubercle bacillus. Of the patients examined, three were between the ages of 5 and 16, the rest being older. Pure cultures of the bacilli were obtained in every case; in one case three cultures were obtained at different periods, and in another case two cultures. From the 15 cultures thus obtained 49 rabbits were inoculated with a dose of 10 mgm. each. These subcutaneous inoculations, which were to a certain extent supervised by Koch, conclusively proved,

according to Dr. Möllers, that only the human type of tubercle bacillus was present. He has also collected the observations on this subject made by 15 workers in 163 cases (including the 12 cases already referred to) of tuberculosis of the bones and joints. Of these, only four were associated with the bovine type of bacillus. The remainder were undoubtedly due to the human type. In other words, only 2·45 per cent. of these cases showed the bovine type of bacillus. These conclusions are much at variance with those to which Dr. J. Fraser has been led by his recent examination of 70 cases of tuberculosis of the bones and joints. He found the human type of bacillus in 26 cases and the bovine type in 41, the remaining 3 showing a mixture of the two types. If Dr. Fraser's and the other workers' observations be compared with reference to the ages of the patients, it is seen that in children under 5 years Dr. Fraser finds the human type of bacillus in 27·27 per cent., and the bovine type in 72·72 per cent., while the other workers find the human type in 100 per cent. Between the ages 5 and 16 Dr. Fraser's figures show the human type in 55 per cent. and the bovine type in 45 per cent., while the other workers' figures show the human type in 94·54 per cent. and the bovine type in 5·45 per cent. In adults over 16 Dr. Fraser has not found the bovine type once, while the other workers have found it in 2·2 per cent. Dr. Möllers argues that these differences cannot wholly be explained by the facts that all but three of Dr. Fraser's patients were under the age of 12, and that his material was gathered from a small area comprising Edinburgh and its immediate neighbourhood. He suggests that Dr. Fraser's conclusions should be accepted with reserve so long as the premises on which they are founded are not fully published.

INDUSTRIAL ANTHRAX IN LIVERPOOL.

IN an instructive paper read last year at the International Congress of Hygiene and Demography, and now reprinted, Dr. E. W. Hope and Dr. W. Hanna drew attention to the occurrence of anthrax in Liverpool among a population which does not come under the special provisions of the Factory Act in regard to that disease. These are principally the carters engaged at the docks and quays, who handle imported wool and hides, and the sorters in wool warehouses or skin stores. The Liverpool public health authorities have, in view of its occurrence in this way, declared anthrax to be a notifiable disease. In a period of about eight years 60 cases have arisen in connexion with the importation of these animal products. The majority appear to have been infected in the unloading or carting of hides, either loose or in bales, but 13 were engaged in handling or sorting wools, such as sheep's wool or goats' hair in wool warehouses, while 7 were infected from horsehair or bristles in hair factories. In the latter case the hair was derived from Russian sources; in the case of the hides infection seems to have been brought from all parts of the world, but chiefly from China and the East Indies. The site of invasion in the case of the dock labourers and carters was usually the cheek, but in some instances it appeared elsewhere as a result of the existence of a skin abrasion which became inoculated. The disease in persons of this class is apt to be specially severe, as, unlike the factory workers, they are not familiar with the existence of any risk from anthrax and do not recognise its early signs. The writers do not consider that the danger of anthrax from foreign imported animal products was diminished, but they find that the number of cases in Liverpool shows some tendency to diminish, which may be ascribed to greater care in handling material and to the efforts of the health department to bring to notice the various methods of prevention, short of disinfection, which should be adopted. Protective gauntlets have been provided by shipping firms in many cases, but the difficulty of getting the men to wear them is very great. But much is done by means of cautionary notices prohibiting the carrying of hides on the men's shoulders, use of mechanical means of removal, and like measures. In recent years the earlier recognition of the pustules and prompt treatment in hospital by excision and administration of Sclavo's serum have materially diminished the number of fatal cases.

AUTUMN COURSE OF DEMONSTRATIONS AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

INSTEAD of appointing special guides for visitors to the Museum the Council of the Royal College of Surgeons of England some years ago resolved to institute a series of demonstrations to be given by officers on the Museum staff. During the past five years these demonstrations have been well attended, although the aim of the demonstrators has been to appeal to the research student rather than to the candidates for ordinary examinations in surgery. The present course of demonstrations, which commences on Friday, Oct. 17th, at 5 o'clock, will consist of eight demonstrations, three being given by the conservator, Professor Keith, three by the pathological curator, Mr. Shattock, and two by the odontological curator, Mr. Colyer. The dates and subjects of the demonstrations will be duly noted in our "Diary of the Week." One of the most interesting of the series should be that given by Professor Keith on Oct. 17th, when a peculiar form of defective bone growth—described a few years ago by Porak and Durante, under the name of *Dystrophie periostale*—will be described and discussed. Two complete examples of this curious and instructive condition have been recently added to the Museum. The demonstrations are open free to all medical men and medical students, and cover subjects which are included in higher examinations in surgery.

REINFECTION AND SUPERINFECTION OF PRIMARY SYPHILIS.

THE discovery of the specific parasite, the study of experimental infection in animals, the application of an exact method of diagnosis, and the introduction of a new therapeutic agent are four important factors which have contributed toward revolutionising our old notions of many obscure problems of syphilography. There are two fundamental problems in the question of syphilitic immunity: (1) whether the immunity period coincides, or not, with that of the disease—that is to say, if the subject can be said to be immune only to such an extent, and so long as he is ill, or if, on the contrary, the state of resistance to infection lasts, and if so how long, after cure has taken place—i.e., after the extinction of all the specific parasites in any situation and under any form; (2) whether the immunity period is capable of *extension*—if, that is to say, it must be interpreted as a condition of absolute resistance of the whole organism, or if, on the other hand, a partial resistance must be admitted as against a receptivity of some parts of the organism. Dr. M. Giuseppe has taken up the study of these problems, giving in a recent number of *Il Policlinico*[1] notes of four cases and a critical investigation of the cases of other observers. Such cases fall into two groups, one in which the clinical picture is made up of the complete development of two cycles of specific infection, while the other comprises cases in which one of these two cycles is incomplete and is therefore represented only by a form of primary infection without secondary manifestations. A study of these cases seems to

[1] Il Policlinico, August, 1913. Medical Section, Fasc. 8, p. 337. Roma.

show that there exists a series of clinical types, linked up by transitional forms, in which therapeutic intervention, especially by "606," plays an important part. While it is possible as a rule to arrive at a differential diagnosis between neo-infection and pseudo-primary forms, it is impossible to distinguish accurately between reinfection and super-infection. Two essential and common facts stood out prominently in all the cases examined by the author—first, the intense and typical lymphatic and glandular regional reaction corresponding to manifestations of primary type; and secondly, the delicacy and precision with which the degree of deviation of the complement signalised modifications of the state of the patients' blood serum, *pari passu* with the disappearance or development of the various morbid forms.

FRACTURE OF THE LIP OF THE ACETABULUM.

IN the *Journal de Médecine de Bordeaux* M. J. Guyot has reported a case of one of those minor fractures which have received little attention because they could not be diagnosed before the introduction of radiography. A labourer, aged 41 years, was emptying a pit containing manure when he was surprised by a falling in of the earth and sustained a severe contusion over the left hip. He was thrown down and wounded in the scrotum by the handle of the shovel with which he was working. The wound was sutured by a practitioner and the patient was taken to hospital, where it was dressed, but he was not detained. Abundant suppuration followed, and healing was not completed for 48 days. After the accident he complained of pains shooting from the root of the penis to the left hip and sacro-iliac joints. On examination it was observed that he walked with short steps. When he tried to walk more quickly he was prevented by pain in the hip. There was no deformity or vicious attitude of the limb. Pain was especially felt when he walked with long steps or endeavoured to separate his thighs, even when sitting. The only movement that was limited was rotation outwards of the thigh, which was painful. On movement articular crackling was observed, but this was found in other joints, especially the right hip and both knee-joints. A radiogram clearly showed that a fragment of the lip of the left acetabulum at the upper part had been broken off. There was a region of greater transparency in the neighbourhood which suggested the existence of some osteitis. The outline of the femoral head and of the cotyloid cavity were very clear, as clear as on the opposite side. The patient was examined by an expert and pronounced to be suffering from a permanent incapacity which was estimated at 25 per cent. A fracture of this kind separating a fragment of the acetabulum is rare, and can be discovered only by systematic radiography.

PUBLIC RESPONSIBILITY TOWARDS PUBLIC SERVICE.

THE value of patient, persistent, and probably unobtrusive work in the library as well as in the laboratory still fails of proper recognition at the hands of those in this practical age who constantly use its results without recognising their dependence thereon. Such work supplies the motive power without which the engineer of progress would be unable to propel his vehicle. It is his control and effective direction, it is true, that produce useful work, but the necessary power he must have, and that power is knowledge gained by patient investigation in the laboratory and research in the library. At the recent meeting of the British Association Principal E. H. Griffiths, in his presidential address in the Section on Education, urged the importance of making evident to the working man his indebtedness to the pioneers of science. He instanced the dependence of refrigerating processes on the investigations of Joule and Thomson, of the electric tramcar on the researches of Faraday, of the telegraphist on those of Volta and Wheatstone, of the steelworker on those of Nasmyth and Bessemer, as instances where the workman's means of livelihood were the outcome of purely scientific investigation; and the discoveries of Davy, of Pasteur, of Röntgen, and of Lister, as enabling them to enjoy in security, comfort, and health the fruits of their labours. And so it is also with library work. Elsewhere in this issue will be found a review of the investigations into the British rainfall during 1912. The researches of the British Rainfall Organisation, as our reviewer points out, are of the greatest value for their bearing on public health questions, and should consequently be of interest to municipal bodies and sanitary authorities. It is, therefore, a matter of regret that the subscriptions in support of this most valuable work fall short of the expenditure by £112, which deficit the honorary director, Dr. H. R. Mill, has himself to meet. We feel sure it cannot be necessary to do more than call the attention of the numerous sanitary authorities throughout the kingdom to this fact. A very small individual effort on the part of each of them would remedy this injustice.

THE demonstration by Dr. Hideyo Noguchi, of the Rockefeller Institute for Medical Research, will take place at the Royal Society of Medicine on Monday next, Oct. 13th, at 5.30 P.M. The following will be shown: 1. Pure cultures of various spirochætæ (Treponema pallidum, T. pertenue, T. microdentium, T. macrodentium, T. mucosum, T. calligyrum, and T. refringens). 2. Transmission of syphilis to animals by means of pure cultures of Treponema pallidum. 3. Demonstration of Treponema pallidum in the brain of general paralytics. 4. Transmission of Treponema pallidum from the brain of general paralytics to the rabbit. 5. Production of symptoms and lesions resembling general paralysis in the rabbit by means of an intracerebral or subdural inoculation with Treponema pallidum. 6. Cultural studies of the virus of rabies. These will be demonstrated by the lantern slides and the real objects. Announcements have been made in the lay press for some days of certain discoveries upon which these demonstrations will bear. Dr. Noguchi, as related by our Paris correspondent a fortnight ago, has already given his important demonstration to the Institut Pasteur.

WE have been asked to state that copies of the catalogue of the Museum of the International Congress of Medicine may be obtained from the honorary secretary of the Museum Committee (Mr. H. W. Armit, Ravenhurst, Talbot-road, Wembley), on the payment of the postage (4*d.* per copy).

THE annual dinner of the London School of Tropical Medicine will be held at Prince's Restaurant on Friday, Oct. 24th, under the presidency of Dr. F. M. Sandwith.

GUY'S HOSPITAL MEDICAL AND DENTAL SCHOOLS.—The following Entrance Scholarships and prizes have been awarded:—Senior Science Scholarship for university students (£50): Arthur Gerard East, St. John's College, Oxford. Junior Science Scholarships (£120): Eric Clark Hinde. Preliminary Science Class, Guy's Hospital (£60): Frederick Currer Hiller, St. Paul's School, West Kensington. Entrance Scholarships in Arts (£100): Eric Roland Webb, Dean Close School, Cheltenham; (£50) Gordon Frank Peters. Certificate: Myles Wheeler O'Bryen, Oratory School, Edgbaston. Open Scholarship in Dental Mechanics (£20): Hugh Muir Smith. Scholarship in Dental Mechanics for pupils of Guy's Hospital (£20): George Dee.

HOSPITAL DINNERS.

St. Bartholomew's Hospital.—The annual old students' dinner, which marks the opening of the winter session, was held in the great hall of the hospital on Oct. 1st, under the chairmanship of Dr. Howard H. Tooth, C.M.G., physician to the hospital. Among the large company were Sir Dyce Duckworth, Sir Clifford Allbutt, Professor Howard Marsh, Sir Lauder Brunton, Sir Francis Champneys, Dr. Samuel West, Dr. J. A. Ormerod, and many of the present visiting staff, together with the headmasters of Haileybury, Wellington, and Westminster. The chairman, in proposing the toast of "Prosperity to the Hospital and Medical School," gave a short review of the past year's work, which he said had been one of activity in all departments. The teaching had become more and more organised, and specialists had now been appointed to take charge of each of the special departments, while the systematic lectures had disappeared. The petition for a charter of incorporation of the medical school had been presented early in the year. Referring to the report of the Royal Commission on University Education in London, Dr. Tooth said that these proposals would touch the hospital and medical school at many points and were engaging the earnest attention of the staff. True clinical teaching in England, which brought the student into personal contact with the patient, was the best in the world, and he hoped that that part of our English teaching would be treasured. The effect of the Insurance Act had been to reduce greatly the work of the out-patient and casualty departments, especially on the male side, but there was no evidence of much diminution among the in-patients. The toast was responded to by Mr. G. Acton Davis, acting treasurer of the hospital, who said that during the past year they had had to deal with many difficult problems of administration and finance. Both speakers made feeling references to the premature death of Mr. R. B. Etherington-Smith, and it was announced that the fund to his memory now exceeded £1700. The toast of "The Visitors" was proposed in an admirable speech by Dr. W. P. Herringham, Vice-Chancellor of the University of London, who referred to his aspiration that London University should become to its graduates what Oxford and Cambridge were to theirs, and spoke in praise of the English educational method and tradition. Sir C. Pardey Lukis, Director-General of the Indian Medical Service, and the Rev. Dr. Gow, headmaster of Westminster, responded. Dr. Gow said that he had followed with great interest the controversy on methods of medical education, and he was convinced of the value and importance of the knowledge gained from personal contact between teacher and student and from the *obiter dicta* of the teacher. The health of the chairman was proposed by Sir Anthony A. Bowlby, who spoke in warm terms of Dr. Tooth's personal qualities and of his services to the Officers' Training Corps. The toast was enthusiastically received, and after the chairman had briefly replied an adjournment was made to the library, where a most successful evening was brought to a close.

Guy's Hospital.—The opening of the school year was marked by a dinner in the College dining hall on Oct. 1st, at which the President of the hospital, Mr. Cosmo Bonsor, presided. Among others, the following gentlemen were present: Dr. W. Hale White, Sir W. Arbuthnot Lane, Dr. H. C. Cameron, Dr. Newton Pitt, Sir George Savage, Mr. R. Clement Lucas, Mr. C. J. Symonds, Sir Alfred Fripp, Dr. J. Fawcett, Dr. Herbert French, Mr. R. Wynne Rouw, Mr. Montagu F. Hopson, and Mr. J. Lewin Payne. After the usual loyal toasts the chairman invited the Dean, Dr. Cameron, to present the annual report of the Medical and Dental Schools. In doing so the Dean referred to the extraordinary activity which had been displayed in every department of the medical school throughout the year. Not only had the new pathological department been brought into smooth working order, but the opening of the session was marked by the simultaneous birth of three new departments, those of pharmacology, morbid histology, and chemical pathology, under the direction of Dr. A. J. Clark, Dr. G. W. Nicholson, and Mr. J. H. Ryffel, respectively—departments which were adequately housed, equipped, and staffed. With regard to the future of the medical school, while it would be folly to deny that the present time was a critical one for all medical schools in London, he was able to say this much: that while not a few other schools had sensibly declined, the medical school of Guy's Hospital had at least held its own and even increased its numbers during the past year; and that so far as the financial position of the school was concerned, thanks to the generosity of the governors and other friends, no single scheme for improvement which had won general approval had had to be withdrawn or even postponed for lack of funds. They had set themselves to develop and perfect, so far as possible, the peculiar system of clinical training which was the pride of all the schools of medicine in London, and he thought that the report of the past year's work showed that in this they had been eminently successful. Whatever changes the future had in store for them they had at least been successful in the work which immediately lay to their hand. Mr. Bonsor, in proposing "The Prosperity and Health of the Medical and Dental Schools," spoke of the recent extension of the medical school and the completeness of its equipment both for teaching and research, and said that during all the years in which he had presided over the meetings of the school the one thing which had struck him most had been the absolute determination of the governors and staff alike that no reason whatever should be allowed to stand in the way of securing efficiency in teaching and opportunity for investigation and research, and that no financial sacrifice to attain these ends could be too great. Dr. Hale White, who replied on behalf of the schools, spoke of the enormous debt of gratitude they owed to the long line of treasurers of Guy's Hospital, and especially to Mr. Bonsor, their chairman that evening. Undertaking office at the time of depression both in the hospital and school, he had guided their fortunes to the present unrivalled position. The service of Mr. Bonsor to the schools could never be over-estimated. The work which he had initiated was being admirably carried on by his successor in the office of treasurer, Viscount Goschen, who, to everyone's regret, was unable to be present that evening.

St. George's Hospital.—The annual dinner of the past and present students of St. George's Hospital was held on the evening of Wednesday, Oct. 1st, at Prince's Restaurant, London, Mr. W. Adams Frost, consulting ophthalmic surgeon to the hospital, being in the chair. Sir William Osler, who had delivered the introductory address earlier in the day, which is published in another column of this issue of THE LANCET, was the guest of the evening. After the loyal toasts had been drunk, Mr. Frost in an interesting speech reviewed the circumstances which have led to the impending migration of St. George's Hospital from the site which it has occupied now for 180 years, and reminded his hearers of the interesting fact that amalgamation with the Westminster Hospital would mean the reunion of two long-divided bodies. Mr. West, the treasurer of the hospital, and Dr. R. S. Trevor, dean of the Hospital Medical School, replied, and the latter made a fighting speech on the position of the school, alluding to the brave front which it had presented in the face of many adverse circumstances which were alike unanticipated and uncontrollable. The aim of the school had always been, as Dr. Trevor maintained it should be, to turn out practical physicians and surgeons, adding that "if God made man, the Devil made the bookworm." Dr. Rolleston proposed Sir William Osler as "The Orator of the Day" in a happy speech, in the course of which he read out some of the questions from the famous examination paper on the "System of Medicine" which appeared in 1902 in the pages of *St. Thomas's Hospital Gazette*. Sir William Osler, in reply, explained, and not for the first time, what he really said and what he really meant with regard to the use of the lethal chamber after the age of 60. He amused his hearers by saying that he was only referring to persons of professorial rank, maintaining that professors should retain dignity of person, a charm of manner, and an abundance of hair that was not usually associated with advanced middle age. He pleaded guilty to being a bookworm, despite Dr. Trevor's aphorism, and concluded an excellent speech by the daring suggestion that if a medical degree upon fair terms was not soon provided for London students the students should combine and take the matter into their own hands. He suggested that a strike of students would solve the problem in a very short time. Dr. Drury Pennington proposed "The Past and Present Students of the

School," and the toast was replied to by Mr. Ivor Back and Mr. E. F. W. Grellier. The health of the chairman was neatly proposed by Mr. G. R. Turner.

King's College Hospital.—The annual dinner of past and present students of this hospital took place on Oct. 2nd at the Waldorf Hotel, under the presidency of Viscount Hambleden, chairman of the hospital and of the medical school. During the afternoon many past students visited the new King's College Hospital at Denmark Hill, and were conducted over the buildings by the Dean and other members of the staff, being afterwards entertained to tea. Among those present at the dinner were Surgeon-General A. W. May (Director-General of the Medical Department of the Navy), Sir C. Pardey Lukis (Director-General of the Indian Medical Service), Mr. A. Boyce Barrow (consulting surgeon to the hospital), Professor Nestor Tirard (senior physician to the hospital), Professor Sir Watson Cheyne (senior surgeon), Sir Ronald Ross, Sir StClair Thomson, Professor W. R. Smith, Professor Ernest White, and Dr. G. E. Shuttleworth. The health of the chairman was proposed by Sir Watson Cheyne, who spoke in warm terms of the exceedingly satisfactory relations which existed between the committee of management and the staff of the hospital. Not until that night had the chair of that dinner been occupied by a layman, but it was unanimously felt that an exception should be made on this memorable occasion, the eve of the opening of their new hospital at Denmark Hill. He was voicing the feelings of all present in expressing the hope that Lord Hambleden would be the chairman of King's College Hospital for very many years to come. Lord Hambleden in his speech explained the reasons which had caused the delay in completing the new hospital. These were largely due to the unfortunate disputes in the labour world during the last few months. He hoped, however, that in a very few weeks the hospital would begin its work, and he was sure the staff would find the building in every way as perfect as it was possible to make it. He desired especially to thank Dr. J. F. W. Silk and the members of the watching committee for the immense amount of time and labour which they had given during the work of building. To this was largely due the perfection of arrangements in the new hospital.

Middlesex Hospital.—The annual dinner of past and present students of Middlesex Hospital was held at the Trocadero Restaurant on Oct. 1st. Sir James Kingston Fowler, K.C.V.O., presided, and a large number of those connected with the hospital and their friends attended. Amongst those present were H.S.H. Prince Alexander of Teck, Sir Alfred Pearce Gould, Dr. W. Pasteur, Sir Squire Bancroft, the Mayor of Marylebone (Mr. J. Penton, jun.), Sir James Collie, and Dr. H. Campbell Thomson, Dean of the School. After the Royal toasts had been honoured, Sir James Fowler proposed the toast of "The Middlesex Hospital and Medical School." He referred to certain matters in the history of the school, especially mentioning the union of the hospital and school. Since the school had been managed by a joint committee, consisting of representatives of the managing body of the hospital and of representatives of the honorary staff and teachers at the school, great success had been obtained. Sir James Fowler referred in terms of deep sympathy to the death of Mr. Andrew Clark, who had been greatly attached to the school. He also spoke in high praise of the excellent work accomplished by Dr. Campbell Thomson as dean of the school. Prince Alexander of Teck, in responding to the toast, said that during the past year separate wards had been allocated for the treatment of patients suffering from skin diseases and for diseases of the eye and ear. In the near future it was hoped that the children's ward would be considerably enlarged, and that the sanitary arrangements of the wards in the south-west wing would be improved. Efforts were being made to put into the hands of the medical staff a sufficient quantity of radium in order that they might test its curative properties to the full. Dr. Campbell Thomson, responding for the school, said that a most satisfactory entry of new students had been obtained. Mr. R. Steer Bowker responded for the past students, and the senior Broderip scholar, Mr. A. O. Gray, for the present students. An excellent musical programme added to a most enjoyable evening.

St. Thomas's Hospital.—The annual dinner of the old students of St. Thomas's Hospital was held at the Hotel Cecil on Oct. 1st, the chair being occupied by Dr. H. P. Hawkins. In proposing the toast of the King, the chairman made reference to the close association between the Sovereign and the hospitals, and while proclaiming the late King Edward as pre-eminent in this respect, remarked that King George was a worthy successor. In proposing the toast of "St. Thomas's Hospital and Medical School," the chairman, after referring briefly to the past, turned his attention to the future, and endeavoured to forecast its trend. This, he said, was an era of change. Of course, there had always been change, and the hospital had adapted itself to such changes. But great and revolutionary changes were now taking place, and these would require considerable adaptation. Referring to the three duties of the hospital—to the patients, to teaching, and to research—he spoke of the necessity for the further organisation of research. The growth of specialism—which was inevitable in consequence of the increase of knowledge to such an extent that no man could compass it all—was such that the day of the general physician was rapidly passing, and soon the specialists would invade the wards, as they had already created for themselves special departments. Moreover, the field of work had now shifted from the wards to the clinical laboratories. He expressed the hope that before they met again a scheme for combined work among the various departments would have taken shape. Mr. J. G. Wainwright, the treasurer, in responding, referred to some of the effects of the Insurance Act. It had reduced the number of genuine out-patients, but had increased the number of casualties; the old-time "chronic" had disappeared. Further, a great many cases were being sent in to the special departments by the panel doctors. The advantage to the hospital in having a tuberculosis department in close contact with it was manifest. The massage department was becoming very large and a baby clinic had been lately established. He referred to the report of the Royal Commission on the University of London, and said that if its recommendations were carried out it would materially interfere with all hospitals. He spoke of a legacy left to the hospital by a former almoner who had recently passed away, which would probably be allocated to the reorganised out-patient department. Referring to the expected and deplored cloud hanging over them on this occasion last year, the retirement of Mr. G. H. Makins, he was glad to inform them that the cloud had lifted and that he was yet to remain a while in active service and coöperate in the reorganisation of the out-patient department. He spoke of Dr. Russell's illness and said that he would be back at his work again by the end of November. Finally, he mentioned that during his treasurership 1194 men had passed through the school and gained their diplomas. Dr. E. Stainer, the dean, also responded, and gave some school statistics. An interesting one was that a party of 30 from St. Thomas's Hospital had helped in the Balkan war. Mr. E. F. White proposed the health of the chairman, who responded. The meeting was a record one, nearly 200 being present, among whom were Surgeon-General Sir Launcelot Gubbins (Director-General, Army Medical Service) and Surgeon-General A. W. May (Director-General, Medical Department, Royal Navy), Alderman Sir Thomas Crosby, M.D., Mr. C. A. Ballance, M.V.O., Dr. F. F. Caiger, Dr. S. M. Copeman, Dr. E. Hopkinson, D.S.O., Dr. S. I. Oddie, coroner for Westminster, and Dr. F. M. Sandwith.

University College Hospital.—The annual dinner for past and present students of University College Hospital Medical School took place at the Café Royal on Oct. 1st. The chair was taken by a distinguished past student of the hospital, Mr. C. J. Bond, of Leicester. The dinner was well attended. The chairman proposed the toast of "The Prosperity of the School" in a felicitous speech full of interesting reminiscences. In his witty reply Dr. G. F. Blacker, the dean, announced the successful state of the school as shown by noteworthy increase in fresh entries and the opening of new departments. Sir Victor Horsley consulting surgeon to the hospital, proposed the health of his friend and fellow-student, the chairman.

Westminster Hospital.—Dr. Purves Stewart took the chair at the annual dinner of the past and present students of the Westminster Hospital Medical School at the Imperial Restaurant, Regent-street, on Oct. 2nd. Proposing the toast of the evening, he referred to the approaching amalgamation of St. George's and Westminster Hospitals.

The principle had been accepted by the governing bodies of both hospitals, which originally were closely related. The newly amalgamated hospitals and schools would have to build a new institution of over 500 beds in some part of London. It had been stipulated that every member of the present staff of both hospitals should retain a position equivalent to that which he now held. Dr. F. de Havilland Hall, in reply, said that the question of name had yet to be settled.

The London Hospital.—The annual old students' dinner was held on Tuesday, Oct. 7th, at the Savoy Hotel, Strand, W.C., when Dr. Wilfred J. Hadley, physician to the hospital, presided over a good assembly. Dr. Hadley, in his speech proposing "Prosperity to the London Hospital," referred to the effect upon the hospital of the National Insurance Act. The reduction in the number of out-patients would mean, he said, a reduction in teaching material for the student; and so serious was this in the matter of tuberculous patients, who were all seeking sanatorium benefits under the Act, that it might be necessary to institute a tuberculosis department.

MEDICINE AND THE LAW.

Mental Deficiency and Provocation as a Defence to a Charge of Murder.

THE Court of Criminal Appeal had to sit recently during the long vacation in order to hear an appeal from a sentence of death passed upon a man named Thomas Alexander at the Central Criminal Court in September. The prisoner, who had received great provocation from his victim, was found guilty of the murder of a woman, Ellen Clarke, and was recommended to mercy by the jury. On the ground that he was mentally deficient an attempt had been made at the trial to induce the judge to put the case to the jury as one of manslaughter, but this he had declined to do; he explained to the jury the law with regard to sanity and insanity, and the jury did not find that the prisoner was insane when he committed the act, but recommended him to mercy, as mentioned above. It was argued on the prisoner's behalf that a thing might be provocation to a man on the border-line of sanity and insanity which could not be treated as a defence in respect of a man perfectly sane. Mr. Justice Darling, who delivered the judgment of the Court of Criminal Appeal, said that it was clear that the jury had held upon the evidence that the man was not insane in the legal sense, although they thought him mentally deficient. All sane persons were not of equal mental capacity, and the verdict meant that the prisoner was below the average mentally, but not across the border-line of sanity, and hence there had been a special verdict. The argument with regard to provocation was ingenious, and one which had not been raised before. If such an argument were allowed to carry weight and a man killed another because he had red hair, the act being done by a person mentally deficient, the judge would have to ask the jury whether the murderer, because he was a person mentally deficient, had sufficient provocation in the fact that his victim had red hair to render the verdict one of manslaughter instead of murder. There was no authority to support such a proposition. Only in very exceptional circumstances could mere words constitute such provocation as would reduce murder to manslaughter. The court must hold that the verdict was a proper one and dismiss the appeal, but it expressed no opinion that would limit the Home Secretary's action in the exercise of the prerogative of the Crown.

LONDON SCHOOL OF TROPICAL MEDICINE.—The winter session opened on Oct. 3rd with 60 students on the books. The additional laboratories, rendered possible by the fund raised by Mr. Austen Chamberlain, are being occupied for the first time. The new course in tropical sanitation and hygiene, open to students who have already attended the ordinary course, will be inaugurated this session, the first lectures being held about Oct. 20th. The increased accommodation for resident students has also been made available, and all the rooms have already been let. The annual dinner will be held at Prince's Restaurant, Piccadilly, W., on Friday, Oct. 24th, under the presidency of Dr. F. M. Sandwith.

Public Health.

REPORTS OF SCHOOL MEDICAL OFFICERS.

City of York.—The report for 1912, signed by Mr. E. M. Smith, school medical officer, and Mr. E. S. Galbraith, assistant school medical officer, is noticeable for the record of work done in the school clinic, which now carries on nearly all the different kinds of work possible to it, and for the presentation of the records of weight and height in conjunction with those of malnutrition. The clinic comprises a "general" department for the supervision of children unfit for school attendance, a treatment department for "minor" ailments, an ophthalmic, and a dental department. There are two whole-time school nurses, five attendance officers, and the whole of the work is well coördinated, the fact that the school medical officer is also medical officer of health materially contributing to this result. The figures for malnutrition show nearly 10 per cent. of children examined to be suffering from this defect; 10 per cent. also "had footgear so defective as to be practically dangerous to the wearer." Also, nearly 10 per cent. are seriously verminous. The "submerged tenth" appears to be a statistical reality. The weights of children are compared with the anthropometric committee's standard, and the total deficiency in weight for the total number of children examined is given as follows:—

—	Children examined.	Deficiency in total weight as compared with anthropometric standard for various age-groups in pounds.	Number of children who would be represented by this weight deficiency.
1910	2,306	9,450	158 { 82 boys. 76 girls.
1911	4,152	14,645	208 { 106 boys. 102 girls.
1912	3,240	11,450	176 { 88 boys. 88 girls.

The total deficiency in weight represented as above in terms of children (calculated as belonging to different age-groups) thus represents the population of a fair-sized school. In other words, the malnutrition in York causes that city to be 542 children short. The question of the special education of such defective children as the feeble-minded and high myopes is receiving attention, and the whole field of medical inspection is gradually being brought under cultivation.

City of Sheffield.—Dr. R. P. Williams's report maintains the high standard of its predecessors and records the continuous growth of the work and the perfecting of the organisation. A valuable feature is the graphic chart of "Facts Disclosed by Medical Inspection," and a diagram giving a bird's-eye view of the agencies coöperating in the very complete school antituberculosis scheme. A proposal is made to combat malnutrition by numerous centres for open-air instruction to which debilitated children would be sent. The record of a special investigation is given in Appendix A with regard to boots and clothing "to determine how far the condition of the child was due to the poverty of the parents and how far to neglect," but unfortunately this requires considerably more explanation than that given to make it of much value to those ouside the district.

City of Carlisle.—Mr. Joseph Beard's report for 1912 calls attention to sanitary defects in schools; the outside conveniences at one infants' school are described as being "in a disgusting and dangerous condition"; and it is very regrettable that any authority should allow such a state of things to continue. Unfortunately, the school medical officer has little or no direct control over the structure or condition of school buildings. A class for "delicate children" is held at Denton Holme, but it is to be hoped the authority will make up its mind to conserve the health of the children who are not yet delicate by providing suitable and sanitary school premises. The cheapness of the open-air school might well be considered if new buildings are required.

County Borough of Bury.—Dr. G. Granville Buckley's report records the beginning of an inspection clinic, one half-day a

week having been set aside for this purpose and 176 cases dealt with. A fair proportion of defective children have been treated, but carious teeth, tuberculous diseases, and various "minor ailments" stand out conspicuously as needing further measures to secure treatment.

Borough of Bootle.—An inspection clinic is held at the town-hall on Monday, Wednesday, and Thursday at 4 P.M., and on Saturday at 10 A.M., and has done useful work. Dr. W. Allen Daley reports that 3966 children were examined in the year, and showed percentages defective: vision, 16·4; four or more unsound teeth, 34·3; and mouth breathers, 14·0. The cost of inspection for the 12 months is given as £489, and the cost per child 9·5*d.* It is noted that owing to the migratory habits of parents of children in Standard II. throughout the borough 38·5 per cent. girls and 31 per cent. boys had not been educated in the corresponding infants' school.

County Borough of Huddersfield.—Dr. S. G. Moore's report suggests the advisability of the wearing of slippers in school, especially in damp weather. The prevalence of dental caries has induced the committee to consider the appointment of a school dentist, and a whole-time officer is to be appointed. The parents attending at the inspections are always handed a note of the height and weight of their offspring, and take the greatest interest in these records. Attention is strongly called to the question of the type used in school books in relation to sight, and the report of the British Association Committee and the comments of the medical officer of the Board of Education are quoted. Children over 9 years should have bold "pica" type and below 9 years "double pica."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns, with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 17,852,766 persons, 8433 births and 4651 deaths were registered during the week ended Saturday, Oct. 4th. The annual rate of mortality in these towns, which had been 14·5, 14·3, and 14·4 per 1000 in the three preceding weeks, declined to 13·6 per 1000 in the week under notice. During the thirteen weeks of the quarter just ended the mean annual death-rate in these towns averaged 12·7, against a corresponding rate of 11·8 per 1000 in the Metropolis. Among the several towns the death-rate last week ranged from 3·6 in Wimbledon, 6·9 in Bournemouth, 7·0 in Swindon, 7·2 in Ilford, and 7·7 in Hornsey, to 20 8 in Aberdare, 21·9 in Sunderland, 23·2 in Tynemouth, 25·2 in Dewsbury, and 26·5 in Great Yarmouth.

The 4651 deaths from all causes were 285 below the number in the previous week, and included 866 which were referred to the principal epidemic diseases, against numbers declining from 1242 to 1081 in the three preceding weeks. Of these 866 deaths, 730 resulted from infantile diarrhœal diseases, 43 from diphtheria, 32 from whooping-cough, 28 from measles, 19 from enteric fever, and 14 from scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 2·5, against 3·3 and 3·2 per 1000 in the two preceding weeks. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 1104, 983, and 927 in the three preceding weeks, further declined to 730 last week; of this number 142 deaths occurred in London, 45 in Birmingham, 38 in Liverpool, 36 in Manchester, 26 in Hull, 24 in Sheffield, 23 in Leeds, 22 in Stoke-on-Trent, and 19 in West Ham. The deaths referred to diphtheria, which had been 36, 40, and 38 in the three preceding weeks, rose to 43 last week, and included 9 in London, 3 in Portsmouth, 3 in Preston, and 2 each in Cambridge, Great Yarmouth, Bristol, Stoke-on-Trent, Birmingham, Salford, and Rhondda. The fatal cases of whooping-cough, which had risen from 31 to 49 in the four preceding weeks, fell to 32 last week; of this number 5 were recorded in London, 4 in Liverpool, 3 in West Ham, and 2 each in Stoke-on-Trent, Birmingham, Bolton, and Leeds. The deaths attributed to measles, which had been 26, 20, and 31 in the three preceding weeks, declined to 28 last week, and included 5 in London, 5 in Stoke-on-Trent, 3 in Bradford, and 2 each in Dewsbury, Barnsley, and Sheffield. The deaths referred to enteric fever, which had been 10, 13, and 17 in the three preceding weeks, further rose to 19 last week, of which 4 occurred in London and 3 in Stoke-on-Trent. The fatal cases of scarlet fever, which had been 28, 18, and 19 in the three preceding weeks, fell to 14 last week, and included 2 in London and 2 in Birmingham.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had increased from 2112 to 2570 in the four preceding weeks, had further risen to 2818 on Saturday last; 499 new cases were admitted during the week, against 346, 473, and 508 in the three preceding weeks. These hospitals also contained on Saturday last 977 cases of diphtheria, 194 of whooping-cough, 65 of measles, and 61 of enteric fever, but not one of small-pox. The 1092 deaths from all causes in London were 74 fewer than the number in the previous week, and corresponded to an annual death-rate of 12·6 per 1000. The deaths referred to diseases of the respiratory system, which had been 132, 125, and 134 in the three preceding weeks, declined to 124, and were 67 below the number recorded in the corresponding week of last year.

Of the 4651 deaths from all causes in the 96 towns, 176 resulted from various forms of violence and 346 were the subject of coroners' inquests. The causes of 35, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in 13 of its 14 suburban districts, in Manchester, Bristol, Bradford, Hull, Newcastle-on-Tyne, Nottingham, and in 55 other smaller towns. Of the 35 uncertified causes of death, 4 were registered in Birmingham, 4 in South Shields, 3 in Liverpool, 3 in Darlington, and 2 each in Stoke-on-Trent, West Bromwich, and Southport.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259.600 persons at the middle of this year, 1051 births and 627 deaths were registered during the week ended Saturday, Oct. 4th. The annual rate of mortality in these towns, which had been 16·4, 14·4, and 15·1 per 1000 in the three preceding weeks, fell to 14·5 per 1000 in the week under notice. During the thirteen weeks of the quarter just ended the mean annual death-rate in these towns averaged 14·3, against 12·7 per 1000 in the 96 large English towns. Among the several towns the death-rate last week ranged from 7·5 in Kilmarnock, 9·5 in Hamilton, and 10·2 in Falkirk, to 17·4 in Greenock, 17·9 in Dundee, and 20·8 in Leith.

The 627 deaths from all causes were 26 fewer than the number in the previous week, and included 81 which were referred to the principal epidemic diseases, against 94 and 90 in the two preceding weeks. Of these 81 deaths, 43 resulted from infantile diarrhœal diseases, 14 from diphtheria, 8 from measles, 7 from scarlet fever, 5 from whooping-cough, and 4 from enteric fever, but not one from small-pox. These 81 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·9, against 2·5 per 1000 in the 96 large English towns. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 96, 62, and 55 in the three preceding weeks, further declined to 43 last week, and included 18 in Glasgow, 9 in Dundee, 4 in Edinburgh, 4 in Aberdeen, and 3 in Leith. The deaths referred to diphtheria, which had steadily increased from 5 to 10 in the five preceding weeks, further rose to 14 last week; of this number 5 occurred in Aberdeen, 4 in Glasgow, and 2 in Edinburgh. The fatal cases of measles, which had been 12, 9, and 10 in the three preceding weeks, fell to 8 last week, and comprised 7 in Glasgow and 1 in Edinburgh. The deaths attributed to scarlet fever, which had been 4, 4, and 5 in the three preceding weeks, rose to 7 last week, of which 2 were registered in Aberdeen. The 5 deaths referred to whooping-cough, including 3 in Glasgow, were slightly below the average in recent weeks. Of the 4 fatal cases of enteric fever, 2 were recorded in Glasgow, 1 in Dundee, and 1 in Falkirk.

The deaths referred to diseases of the respiratory organs, which had been 65, 63, and 66 in the three preceding weeks, further rose to 69 last week; 27 deaths were attributed to different forms of violence, against 17 and 26 in the two previous weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,199,180 persons at the middle of this year, 696 births and 415 deaths were registered during the week ended Saturday, Oct. 4th. The annual rate of mortality in these towns, which had been 21·1, 19·8, and 21·0 per 1000 in the three preceding weeks, declined to 18·0 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual death-rate in these Irish towns averaged 18·2 per 1000; in the 96 large English towns the corresponding rate did not exceed 12·7, while in the 16 Scotch towns it was equal to 14·3 per 1000. The annual death-rate last week was equal to 20·1 in Dublin (against 12·6 in London and 14·8 in Glasgow), 13·2 in Belfast, 21·8 in Cork, 21·6 in Londonderry, 23·0 in Limerick, and 38·0 in Waterford, while in the remaining 21 smaller towns the mean death-rate was equal to 17·9 per 1000.

The 415 deaths from all causes were 68 fewer than the number in the previous week, and included 94 which were referred to the principal epidemic diseases, against 120 and 103 in the two preceding weeks. Of these 94 deaths, 78 resulted from infantile diarrhœal diseases, 5 from scarlet fever, 4 from whooping-cough, 3 from enteric fever, and 3 from diphtheria, and 1 from measles, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 4·1 per 1000; in the 96 large English towns the corresponding rate was 2·5, while in the 16 Scotch towns it did not exceed 1·9 per 1000. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 111, 98, and 84 in the three preceding weeks, further declined to 78 last week, and included 26 in Dublin, 15 in Belfast, 8 in Londonderry, 6 in Portadown, 5 in Cork, 5 in Waterford, and 3 in Queenstown. The deaths referred to scarlet fever, which had been 4, 6, and 3 in the three preceding weeks, rose to 5 last week, and comprised 3 in Belfast and 2 in Dublin. Of the 4 fatal cases of whooping-cough, which were slightly below the average in recent weeks, 3 occurred in Galway and 1 in Dublin. The 3 deaths referred to diphtheria and 2 of the 3 deaths to enteric fever were recorded in Dublin. The fatal case of measles was registered in Newry.

The deaths referred to diseases of the respiratory system, which had been 41, 56, and 60 in the three preceding weeks, declined to 34 in the week under notice. Of the 415 deaths from all causes, 121, or 29 per cent., occurred in public institutions, and 7 resulted from various forms of violence. The causes of 16, or 3·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council of April 1st, 1881, Deputy Surgeon-General Richard Aubrey Fitch has been placed on the Retired List (dated Sept. 27th, 1913).

The following appointments have been notified:—Fleet-Surgeons: J. E. Coad to the *Terrible* and for group of ships of Third Fleet; H. H. Pearse to the *Commonwealth*; F. J. Burns to the *Orion*; E. B. Townsend to the *Vernon*; J. C. Rowan to the *Audacious*, on commissioning, and as acting interpreter in German; and J. E. H. Phillips to the *Leander*, and for duty with torpedo boat destroyers. Staff-Surgeon: F. E. Anley to the *Weymouth*, on recommissioning; K. D. Bell to the *Victory*, additional, for disposal, and to the *Audacious*, on commissioning. Acting-Surgeon: P. B. Wallis to the *Victory*, additional, for Haslar Hospital, and for course of instruction at Naval Medical School, Greenwich College, and Royal Naval Hospital, Haslar.

ROYAL ARMY MEDICAL CORPS.

Royal Army Medical Corps Training Establishment: Lieutenant-Colonel Alexander A. Sutton, D.S.O., Royal Army Medical Corps, to be Commandant, vice Colonel George D. Hunter, D.S.O. (dated Sept. 20th, 1913).

Major Gerald S. Mansfield retires on retired pay (dated Oct. 4th, 1913).

Lieutenant-Colonel T. Du B. Whaite has been placed under orders to embark at Southampton for a tour of service with the Northern Army in India, and on arrival will be appointed for duty with the Third (Lahore) Division. Lieutenant-Colonel R. J. Geddes, D.S.O., late senior medical officer at Jubbulpore Cantonment, has been appointed an Honorary Associate to the Order of St. John of Jerusalem by His Majesty the King. Lieutenant-Colonel J. Fallon has been appointed to hold charge of the Military Hospital at Lahore on transfer from Dalhousie Cantonment.

Major H. B. G. Walton has been transferred from the Military Hospital at Bareilly Cantonment to Ranikhet. Major W. B. Winkfield has taken up duty at the Military Hospital, Maymyo, Upper Burma, on transfer from Meiktila Cantonment. Major G. Mansfield has been appointed to hold charge of the Military Hospital at St. Peter's Barracks, Jersey, in succession to Lieutenant-Colonel E. Davis, who has retired from the service. Major G. Baillie has been appointed to the Military Hospital at Colchester, on transfer from Yarmouth. Major A. A. Seeds has been transferred from the Military Hospital at Rawal Pindi Cantonment and appointed Senior Medical Officer at Kuldhana, Murree Hills District. Major P. H. Henderson has been appointed to the Military Hospital at Portsmouth, on termination of a tour of duty at the Royal Army Medical Corps Camp of Instruction at Tidworth Park, Salisbury Plain. Major S. M. Adye-Curran has arrived home on leave of absence from Sialkot Cantonment. Major S. H. Withers has taken up duty as Senior Medical Officer at Dagshai Cantonment, Simla Hills District. Major A. W. N. Bowen has been granted six and a half months' leave of absence home from India. Major J. Dorgan has embarked for a tour of service in South China. An exchange on the roster of service abroad has been approved by the Director-General between Major E. S. Clark, in charge of the Military Hospital at Holywood, and Major A. O. B. Wroughton, in charge of the Military Hospital at Maidstone. Major C. C. Cumming, specialist in bacteriology, has embarked for a tour of service at Malta. Major J. H. R. Winder has taken over medical charge of the Military Families Hospital, Wellington Lines, Aldershot. Major J. W. West has been appointed Specialist in Operative Surgery to the Second (Rawal Pindi) Division of the Northern Army in India. Major H. E. M Douglas, V.C., D.S.O., has been placed under orders to proceed to Egypt for a tour of service. Major G. St. C. Thom has taken up duty as Deputy Assistant Director of Medical Services (Mobilisation) to the Second (Rawal Pindi) Division of the Northern Army in India. Major T. J. Potter has been appointed Clinical Pathologist to the Military Hospital at Cairo. Major C. T. Samman has been appointed Specialist in Mental Science to the Fifth (Mhow) Division.

Captain J. E. Powell has been appointed to the Military Hospital at Hilsea. Captain G. H. Rees has been transferred from medical charge at Mosney Camp to the Military Hospital at Belfast. Captain M. Keane has been placed under orders to embark for a tour of service with the Ninth (Secunderabad) Division. Captain O. Ievers has been appointed to the Military Hospital at Chatham. Captain T. T. H. Robinson has been transferred from the Military Hospital at Lichfield to Strensall for a tour of duty. Captain G. A. Kempthorne has been transferred from the Royal Army Medical Corps Camp of Instruction at Tidworth Park, Salisbury Plain, to Tregantle Fort. Captain R. W. D. Leslie has been transferred from the Military Hospital at Gosport to Romsey. Captain M. C. Wetherell has been appointed to Kildare for duty at manœuvres. Captain L. Cotterill, instructor in musketry at the Royal Army Medical Corps Depôt, has been appointed to the First (Peshawar) Division of the Northern Army in India. Captain A. A. Meaden has been appointed to the Eastern Command for duty at the Military Hospital, Colchester. Captain W. H. Forsyth has been transferred from Tidworth Park, Salisbury Plain, to Netheravon for duty at the Cavalry School. Captain J. H. Campbell has been appointed to the Scottish Command for duty at the Military Hospital, Edinburgh. Captain H. C. Sidgwick has been appointed to the Royal Herbert Hospital at Woolwich. Captain J. McKenzie has been placed under orders for duty with the Eighth (Lucknow) Division of the Southern Army in India. Captain N. Low has been appointed to the Military Hospital

at Cosham. Captain G. G. Tabuteau has qualified at the Royal Army Medical College for appointment as Specialist in Operative Surgery. Captain R. H. L. Cordner has been appointed to the Aldershot Command. Captain H. J. Crossley has been placed under orders to embark at Southampton on Oct. 22nd for a tour of service in India and has been placed under orders for duty with the Seventh (Meerut) Division of the Northern Army in India. Captain R. G. Meredith has taken up duty in the London District. Captain F. E. Roberts has been appointed to the Military Hospital at Shorncliffe and has been selected for appointment as Specialist in State Medicine. Captain T. H. Gibbon has taken up duty at King George V. Military Hospital, Dublin. Captain F. C. Lambert has been placed under orders for duty with the Sixth (Poona) Division of the Southern Army in India. Captain J. E. Hoar has been appointed to the Military Hospital at Chatham. Captain A. H. Jacob has been transferred from the Military Hospital at Dublin to Wicklow and appointed to hold medical charge at the Murrough Camp. Captain C. W. O'Brien has taken up duty in the London District. Captain R. E. Humfrey has joined the Military Hospital at Cork for a tour of duty. Captain A. D. Fraser has been selected for appointment as Specialist in Bacteriology. Captain R H. MacNichol has been placed under orders to embark for a tour of duty in Malta.

Lieutenant B. H. H. Spence has been appointed to the Second (Rawal Pindi) Division. Lieutenant W. F. Christie has taken up duty in the Straits Settlements. Lieutenant S. P. Sykes has been placed under orders for a tour of service in India, and on arrival will be appointed to the Third (Lahore) Division of the Northern Army. Lieutenant C. C. Jones has taken up duty in the London District. Lieutenant C. J. H. Little has joined the Northern Command. Lieutenant W. Stewart has relinquished duty at the Military Hospital, Colchester, and embarked for service with the Seventh (Meerut) Division of the Northern Army in India.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel V. Drake-Brockman, Agency Surgeon at Meywar, has been placed under orders for transfer to Bhagelkhand.. Lieutenant-Colonel W. Ronaldson Clark has been appointed to hold civil medical charge at Jullundur. The services of Lieutenant-Colonel W. E. Jennings have been placed at the disposal of H.E. the Commander-in-Chief in India.

Major A. Murphy has arrived home on leave of absence from India. Major J. Watson has been selected for appointment as Agency Surgeon to the Eastern States of Rajputana by the Foreign Department of the Government of India. Major H. A. F. Knapton has been appointed to officiate as Sanitary Commissioner to the Government of Bombay Presidency. Major C. G. Webster, of the Madras Medical College, has been granted two years' combined leave of absence home from India. Major W. M. Anderson, second-class agency surgeon, has been appointed Residency Surgeon to the Gwalior State. Major A. G. Sargent has been appointed Superintendent of the Lunatic Asylum at Rangoon, in succession to Major W. H. Cox, D.S.O., granted leave of absence home from India. Major E. E. Waters has been appointed to officiate as Professor of Materia Medica at the Government Medical College, Calcutta, during the absence on sick leave of Major D. McCay.

Captain H. P. Cook has been appointed to the United Provinces of Agra and Oudh for employment in plague prevention duty. Captain J. V. Macdonald has been transferred from duty under the Home Department of the Government of India and reverted to military employment. Captain R. G. Croly has embarked at Bombay in medical charge of troops on board the s s. *Barjora* for service at Muscat. Captain H. N. H. Melhuish, plague medical officer at Rohtak, has been granted combined leave of absence home from India for six months. Captain N. S. Sodhi, plague medical officer at Gurgaon, has been transferred to the Ludhiana District. Captain H. C. Keates has been appointed to hold civil medical charge at Campbellpore on return to duty from leave of absence. Captain S. H. Lee-Abbott has been appointed Civil Surgeon at Ferozepore on termination of leave of absence. Captain E. T. Harris, civil surgeon at Toungoo, has been transferred to Bassein and appointed to hold civil medical charge in succession to Captain E. A. Walker. The services of Captain T. G. F. Patterson have been placed temporarily at the disposal of the Government of Bombay Presidency for civil medical employment. Captain J. M. A. Macmillan, civil surgeon at Hoshangabad, has been granted privilege leave of absence. Captain J. Cunningham has been placed on special duty under the Director-General I.M.S., at Barisal Jail, in connexion with the prevalence of dysentery in Eastern Bengal jails.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants to be Captains:—Charles M. Page (dated Sept. 14th, 1913). Edward T. Holland (dated Sept. 28th, 1913). William M. Biden (dated Sept. 30th, 1913).

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd Lowland Field Ambulance, Royal Army Medical Corps: Lieutenant James Young to be Captain (dated August 8th, 1913).

North Midland Mounted Brigade Field Ambulance, Royal Army Medical Corps: Lieutenant William M. Hewetson resigns his commission (dated Oct. 8th, 1913).

Welsh Border Mounted Brigade Field Ambulance, Royal Army Medical Corps: Major Alexander G. Hamilton to be Lieutenant-Colonel (dated July 18th, 1913).

3rd London General Hospital, Royal Army Medical Corps: Captain Frederick Richard Miller, from the 6th London Field Ambulance, Royal Army Medical Corps, to be Captain in the permanent *personnel* (dated Sept. 10th, 1913).

ROYAL NAVAL MEDICAL SERVICE: EXAMINATION FOR APPOINTMENTS AS ACTING SURGEONS.

At the examination for the Naval Medical Service held on Sept. 29th and Oct. 1st and 2nd, 13 candidates were successful and obtained the following marks:—

	Marks.
J. S. Elliot, M.B., Edinburgh University	1703
A. J. Tonkinson, M.B., London Hospital...	1688
A. R Sharrod, M.B., London Hospital	1643
T. J. Kilbride, M.B., Cecilia-street Medical School, Dublin ...	1578
A. E. Panter, B.A., M.R.C.S. Eng., L R.C.P., Cambridge University and King's College Hospital, London	1515
G. S. Harvey, M.B., University College, Cork	1483
J. P. Blockley, M.B., Edinburgh University...	1470
W. H. Murray, L.R.C.P. & S., University College, Cork	1456
J. R. Haldane, M.B., Glasgow University	1455
G. H. Hayes, M.B., University Col ege, Cork	1435
W. S. Birch, M.R.C.S. Eng., L.R.C P., King's College Hospital	1418
H. C. A. T. Cannon, L.R.C.P. & S., Royal College of Surgeons, Ireland	1380
H. J. Hopps, M.B., Edinburgh University	1338

The maximum number of marks obtainable is 2400.

DEATHS IN THE SERVICES.

Deputy Surgeon-General Nathaniel Norris (late A.M S.), at his residence, Chester, in his eighty-third year. He entered the service in 1855, and served with the Jowaki expedition in 1877 (medal and clasp). He was in the Afghan war of 1878–80, and was medical inspector on the lines of communication in the Soudanese Nile expedition of 1884–85 (medal with clasp and bronze star).

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Opening of the Medical Session.

Professor A. E. Boycott gave an address on Oct. 1st in the Medical School to inaugurate the session. He chose for his subject "The Aim of Pathology." Professor W. Stirling, in opening the course of lectures on physiology, gave an address under the title "Can you Believe Your Eyes?" The address was illustrated by many lantern slides of geometrical and other optical illusions, as well as by optical illusions of varying characters projected on the screen. He said that the wise saying of Solomon, "Hardly do we discern the things that are on earth, and the things that are close at hand we find with labour," still holds true. Illusions make up a large part of our daily life, while the fusion and continuity of impressions which give rise to many optical illusions are represented by the action of the thaumotrope and its latest offspring, the cinematograph. The light of the body is the eye, yet the great majority of mankind either do not see the

fraction of what is displayed to their organs of vision or they fail to interpret correctly what is presented before them. Ruskin said that the degree of vision that dwells in a man is the correct measure of a man, and "to see clearly is poetry, prophecy, and religion all in one." The sense of sight is the one in which we believe most implicitly, and the one which gives us the largest store of information regarding the world in which we live. So confident are we that what we see must be true, that the expression "Seeing is believing" has passed into a proverb. The possible field of error is larger in the case of vision than in any other sense-organ. Many illusions have their roots in normal mental life. If on seeing an object we believe, and the belief is demonstrably wrong, there is an illusion. Pictorial art is largely based on illusions. In architecture the ancient Greeks corrected the unpleasant optical illusion which columns with perfectly straight edges suggest—namely, the appearance presented by the shaft of being narrower at the middle of the column. They therefore gave to the middle of the shaft an increased diameter—a process known by the name of entasis. The Greeks also applied the same correction to the apparently vertical sides of a tower. In the course of his address Professor Stirling showed experiments to illustrate the after-effects of scene movements, such as the effects produced by gazing for a short time at a waterfall and then turning our eyes to the contiguous rocks, when the rocks appear to move upwards with a velocity equal to that of the falling water. The production of coloured fringes from non-coloured objects was illustrated by Benham's spectrum-top. The subjects of irradiation, contrast, direction of lines, and objects seen under familiar conditions were presented and explained.

Professor Stirling in addition on Oct. 3rd gave a demonstration of new cinematograph films to students and medical men on "Some Applications of Cinematography in Physiology, and more especially in the Teaching of Physiology." Professing himself to be a convinced believer in the value of cinematography in the teaching of physiology, the lecturer presented first a series of films to illustrate the movements of microscopic animals by the method known as "dark-ground illumination"; then he showed the protoplasmic movements of amœba and of some animalcules which are propelled by means of ciliary motion. The same method was adopted to show the movements of the white cells of the blood of the carp, which have their nucleus at the hind end of the cell. The circulating movements of the protoplasmic granules and chlorophyll granules within certain water plants were projected on the screen. The actual growth of the protoplasm of slime-fungi at the circumference of the organism, as well as the remarkable reversible movements in the protoplasm itself, could be seen by the whole audience. The astonishing corkscrew-like movements of the organisms known as spirochætæ were next shown. The circulation of the blood in a small crustacean—an Isopod—was demonstrated. The latest advance in cinematography which is known as "ultra-cinematography" was also illustrated. In this method the successive phases of movement are "slowed down." Impressions of a movement, such as walking, running, or the flight of a bird, are taken at the rate of 180 images per second. These images were projected in the ordinary manner—i.e., 16 per second, so that the audience could analyse with perfect ease the successive movements of the human limbs in locomotion, as well as the graceful movements of a pigeon flying freely in the open air under perfectly normal conditions. The beating of the heart in the open chest, when normal and during asphyxia, was projected, the movements being slowed from 10 to 20 times their normal speed, so that the successive stages of these movements could be analysed by the unaided eye. It is now well known that living embryonic tissues can be cut from the living body and can be cultivated in appropriate aseptic media for many days after removal from the body. The study of surviving excised tissues *in vitro* has been specially prosecuted in America by Harrison, Burrows, Carrel, Lambert, and others, and in France more especially by Levaditi and Comandon. Professor Stirling showed a small fragment of a spleen removed from a developing chick which was placed in a sterilised culture medium and kept at 37° C. The tissue lives for many days, and the audience could see the growth of the tissue itself, as well as the leucocytes emigrating from the piece of spleen and moving freely in the surrounding medium. A fragment of the embryonic heart of a chick showed the actual outgrowth in a radiate manner of elongated protoplasmic cells into the surrounding medium. More than this, some of the cells ceased to elongate, retract, become globular, and before the eyes of the audience were seen to divide into two new independent cells. The growth of cells from such a minute fragment of the heart fills the field of the microscope with fusiform cells in about eight hours.

Recommendations for Ambulance Provision.

In order to extend the ambulance service amongst the poorer classes the chief constable recommends that on the production of a medical certificate the free use of an ambulance be allowed to all householders who have, from all sources, an income of less than 35*s.* a week coming into the house. To secure the coöperation of medical men, and to prevent abuse as far as possible, practitioners should be supplied with a book of printed certificates, so that when called to a case requiring an ambulance they could fill in the certificate, giving the patient's full name and address, nature of disease, hospital to be conveyed to, and stating that in his opinion it was a case for free removal, and was non-infectious.

Mr. J. Carter Bell's Bequests.

Mr. Joseph Carter Bell, of Higher Broughton, public analyst for the county of Chester and for the county borough of Salford, after certain preliminary bequests, has divided the residue of his estate, approximately £30,000, into sixtieths, leaving three-sixtieths each to the Manchester Royal Infirmary, the Salford Royal Hospital, and the London Orphan Asylum at Watford. The remainder he bequeathed to relatives.

Oct. 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Treatment of Tuberculosis in Edinburgh.

To meet the increased demand for accommodation for phthisis patients at the city hospital for infectious disease the public health committee recently decided to erect two large open-air shelters there, each to accommodate 60 patients. Each is in the form of an elongated shed with an entirely open front, which can be easily partially enclosed by means of screens. The administration accommodation is very complete, comprehending excellent kitchen and bathrooms, and there is a large dining hall and also recreation room attached to each shelter. There is now accommodation at the city hospital for 180 cases, and with these new quarters it will be possible to have the early cases—for whom treatment must now be provided under the National Insurance Act—living under a different roof from the more advanced cases, for whom alone up to the present provision has been made at the hospital. There are at present, therefore, 92 vacant beds.

The Declining Birth-rate in Edinburgh.

An interesting return in this connexion is that made by the Edinburgh school board regarding enrolments in the day schools, which show a decrease of 748 as compared with September of last year. This fall off in numbers has taken place in the elementary schools alone, the returns for the higher grade showing a slight increase. One notes that out of 57,170 houses in Edinburgh with a rental of £30 or under, no less than 32,377 had no children of school age, which is an increase of 1798 houses in this category as compared to this state of affairs last year. The special schools showed an increase in enrolments of 12, the total being 496.

Sanatorium Benefits in Midlothian.

A statement issued by the Insurance Committee for the county remarks upon the small demand for treatment in the sanatorium. During the year there were only 32 applications, and as five were refused as being unsuitable for domiciliary or sanatorium treatment, but 27 patients were taken charge of. As the committee is allowed 9*d.* per head over the number of insured persons, which was taken as 35,000, a considerable surplus is carried over, the expenses to the committee for cases treated being only £469 as regards sanatorium benefit.

Royal (Dick) Veterinary College, Edinburgh.

At the opening of the new session of the Royal (Dick)

Veterinary College, it was announced that operations for the erection of the new college buildings were progressing rapidly, and would be pushed on with all speed in order that the classes might be transferred from the old buildings at an early date. The cost of the new buildings is estimated at £65,000.

Memorial to a Tiree Medical Man.

An interesting ceremony took place at Baugh, Island of Tiree, on Sept. 29th, the occasion being the formal inauguration of the memorial recently erected to the late Dr. Alexander Buchanan, of Tiree. The monument is composed of a shaft of Aberdeen red granite, 10 feet high, resting on a solid granite pediment, encircled in a rough cairn of sea-worn boulders, the whole erection rising to a height of 17 feet from the ground. The eastern face of the pediment bears the following inscription:—"In loving memory of Dr. Alexander Buchanan, born at Callander 4th October, 1835, died at Tiree 29th April, 1911, for 51 years the medical officer and loved and valued friend of the islanders." At the unveiling ceremony reference was made by various speakers to the love and respect in which Dr. Buchanan had been held throughout the island.

The Tuberculosis Order in Glasgow.

The executive committee formed by the corporation of Glasgow under the Diseases of Animals Acts have brought forward a proposition that certain work should be transferred from the health department to their department with a view to assisting the veterinary inspector in carrying out the Tuberculosis Order, 1913. The Order from the Board of Agriculture and Fisheries aims at the destruction of bovine animals suffering from tuberculosis. If it is to be effectively carried out there should be a regular inspection of the dairies and byres within the city. The work of inspection, it is suggested, will be similar to what is being done at present, but in addition to that work arrangements will have to be made for the valuation, slaughter, post-mortem examination, and testing with tuberculin of all bovine animals (not cows alone), and the sale of the carcasses. The veterinary inspector is to be authorised to deal with these matters, but where the owner does not consent to the slaughter of a tuberculous animal or its value exceeds £30 the inspector is to advise the town clerk, who shall communicate with the Board of Agriculture and Fisheries.

Special Reservists and Measles; the Outbreak in the Outer Islands.

At a meeting of the public health committee of Inverness-shire held on Sept. 30th, a letter was read from the headquarters, Scottish Command, in reference to the introduction of measles to the outer islands by special reservists. A resolution anent the matter passed at the last meeting of the county council had been forwarded to the chief medical officer of health, headquarters, Scottish Command. The following points were noted in the communication: 1. As the maintenance of the health of the troops is of very great importance, these soldiers are under constant and close medical supervision while in camp. The outbreak of infectious disease is thus discovered as soon as possible after the appearance of initial symptoms, and contacts are speedily isolated. 2. Every endeavour is made to ensure that soldiers in an infectious condition are not allowed to mix with the civil population, and special steps are invariably taken for the medical inspection of the men of the Special Reserve just before disbanding. 3. No complaints of the spread of infection from this source have been received from other parts of Scotland. 4. Though men actually sick can be detained, it is not in the power of the military authorities to detain healthy men or contacts beyond their training period. To do so would require a special Act of Parliament. I may mention also that the financial aspect of this part of the question presents insuperable difficulty. The letter goes on to regret the occurrence of the epidemic referred to by Dr. Murdo T. Mackenzie, and to give assurance that every effort will be made in the fnture by the military medical authorities, as far as lies in their power, to prevent the repetition of such an unfortunate incident.

Diphtheria Epidemic in Aberdeen.

A severe epidemic of diphtheria is at present raging in Aberdeen. Fortunately the majority of the cases have not been of a severe type. On the advice of the medical officer of health the water-supply at the various schools in the city was turned off on the 26th of last month. At a meeting of the Aberdeen school board held on Sept. 26th the chairman, in answer to a question, said that he thought it was rather the use of the drinking mugs at the schools that was objected to than to the use of the water itself.

The late Dr. Gavin Tennent.

Dr. Gavin Paterson Tennent, whose death was recorded in these columns on Sept. 27th, bequeathed £25,000 to the University of Glasgow. A point in his life also, I think, deserves further mention. In his younger days he had a large experience of relapsing fever, a disease known only by name to the majority of the profession at the present day. In 1867, the year in which he graduated, there were many Glasgow practitioners who remembered the epidemic of relapsing fever in the year 1843, when there were 32,000 cases in eight months. In March, 1870, the disease reappeared in the city, Dr. Tennent being resident physician in the fever hospital then in Kennedy-street. At the end of October of that year the routine work of the wards became so heavy that elaborate clinical records could no longer be compiled, but Dr. Tennent had already collected copious data relative to 352 successive cases, and published an analysis of them in the *Glasgow Medical Journal* for May, 1871.

Oct. 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Irish Medical Committee.

THE new Irish Medical Committee has issued a circular, copies of which are to be sent to the members of the profession by the secretaries of the various Local Medical Committees. An account of the formation of the Irish Medical Committee is given, and attention is drawn to the critical position in which Irish doctors have been placed by the statement made by Mr. Lloyd George in the House of Commons on August 14th, to the effect that, if a scheme could be devised for certification which was satisfactory to the medical profession and the Approved Societies, he would be prepared to ask Parliament to increase the grant by such amount as may be necessary, subject to the limit of 2*s.* 6*d.* per insured person which has been imposed. Further, it is pointed out that in the struggle which is likely to take place in Ireland over the extension of medical benefits—based on the recommendations of the Majority Report of the Treasury Inter-departmental Committee—the medical profession will have no security, except in its own united action, against the gravest injury to its status, its interests, and the efficiency of its work. An appeal is therefore made for financial support for the expenses of this struggle, and it is expected that members of the medical profession will forward not less than £1 as their present subscription. The difficulty is that the expenses of the Local Medical Committees—which are not small—must be met in the first instance.

Infantile Mortality in Dublin.

The high rate of infantile mortality in Dublin during the past few weeks gives cause for anxiety. In particular, the prevalence of diarrhœa and enteritis is alarming. To some extent the unusually dry season is responsible, but it cannot be doubted that the distress consequent on the industrial dispute has made matters much worse. In the four weeks ending Sept. 27th there were 107 deaths of children under 2 years of age from diarrhœal diseases. It is noticed by residents in Dublin that the number of flies has been abnormally great this autumn, and there is little doubt that this has been a factor in the spread of disease. With a view to diminishing the propagation of flies, the public health committee advises the cleansing of lanes and courts not in charge of the corporation. The streets and lanes in charge of the corporation are, however, far from clean, and no attempt is made to enforce the law against private owners. An instructive correspondence has passed between the public health committee and another committee of the corporation, the cleansing committee. The former requested the latter to water the streets before sweeping, in order to keep down the dust. The cleansing committee replied that the water in the city reservoir was low, and economy was required. In response the public health committee pointed out that water could readily be obtained from the canals for watering the streets. Of this suggestion no notice was taken, and on the

rare occasions when the streets are swept the dust is raised in clouds to the tops of the houses.

Treatment of Tuberculosis in Belfast.

The scheme for the treatment of tuberculosis devised by the corporation of the county borough of Belfast having now been approved of by the Local Government Board for Ireland, and the Treasury having now written to guarantee the share to be borne by them, which will amount to £16,745 13*s.* 4*d.*, according to the estimate, the arrangement will shortly come into being. The White Abbey Sanatorium, built and at present run by the Belfast board of guardians, is to be taken over by the city corporation. In the meantime, a very keen canvass is going on for the post of chief tuberculosis officer, who is to have a salary of £600 a year.

Oct. 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Académie de Médecine.

THE permanent secretary of the Académie de Médecine has been authorised to accept in its name the legacy of M. Pannetier, made in his will dated Dec. 10th, 1908. This legacy consists of 100,000 francs, the proceeds to be devoted to the establishment of an annual prize for the author of some discovery in medicine or surgery, or to any person who shall be distinguished for the application of recent discoveries. If during one or more years the prize cannot be awarded, the interest is to be added to the capital, to augment the proceeds in the ensuing years. The sum bequeathed is to be invested in French three-per-cents. in the name of the Académie de Médecine, the destination of the proceeds being duly recorded.

The Sale of Poisonous Substances.

Oct. 7th has been set aside for discussion at the Académie de Médecine of a proposition advanced by many of the members for a Bill to modify the ordinance governing the sale of poisonous substances. At present no one who does not hold a pharmacist's diploma or is not authorised by the laws in force to dispense medicines under exceptional conditions to his patients may supply for use in human or veterinary medicine the poisonous substances contained in Table A, which may be dispensed only on the prescription of a medical man, of a veterinary, or of persons authorised especially to prescribe them. The author of the prescription must sign and date the prescription and give his name and address and the doses of the said poisons, and must indicate their mode of administration. Ergot and corrosive sublimate may be supplied on the prescription of a midwife. In default of any contrary indication by the author, every prescription containing poisonous substances in Table A may be repeated by pharmacists, but prescriptions containing aconitine or its salts, hydrocyanic acid, potassium cyanide, digitaline, hashish and its preparations, strophanthine, veratrine or its salts, may not be repeated either by the pharmacist who first dispensed the prescription or by any other. The same prohibition extends to prescriptions ordering the alkaloids of opium or cocaine, as well as their salts or derivatives, but only when these products are prescribed by themselves or in the form of solutions for injection. It applies also to powders with a cocaine base or one of salts containing these substances in a proportion of or above 1 per cent. Pharmacists must enter their prescriptions on a register and enter also renewals thereof. When they retain the prescription they must return to the patient a signed and dated copy. These articles of the law leave many loopholes. It appears insufficient to authenticate prescriptions by signing and dating them and legibly appending the name and address. It would be a good plan to enjoin the use of a stamp or an adhesive wafer bearing the name and address of the medical man, together with his number on the official register. It is also very dangerous for the medical man as well as for the pharmacist, and opposed to the interests of the public health, to permit the repetition of any prescription containing poisonous subjects without renewal by its author; first, because the prescription was written to apply only to a determined condition, and the medical man alone can determine other cases in which the prescribed medicaments are suitable; next, because, since it is forbidden to supply the drugs without a prescription from a medical man, it may be equally or even more dangerous to repeat them without the advice of him who is the sole judge of the fitness of repeating them. Dr. Desesquelles therefore proposes to replace this entire article of the law by the following: In the absence of any contrary indication by the author of the prescription, no prescription containing any of the poisonous ingredients in Table A may be repeated by pharmacists. The supplying of aconitine or its salts, of hydrocyanic acid, of potassium cyanide, digitaline, hashish or its preparations, must not be repeated without a fresh prescription from a medical man, the prescription being dated and legibly signed and bearing the medical man's name and address.

The Collège de France.

The Minister of Public Instruction has signed the decrees whereby the number of chairs in the Collège de France is reduced from 43 to 40, the suppression to take place as the chairs fall vacant. The annual salaries of the 40 professors of the college are fixed at 12,000 francs.

Conferences on Electricity, X Ray, and Radium.

The Société des Médecins Chefs des Laboratoires de Radiologie et d'Electro-radiothérapie des Hôpitaux de Paris organises twice yearly, in November and May, a series of theoretical and practical conferences on electricity, X ray, and radium, lasting for one month. The first series will take place from Nov. 3rd to Dec. 2nd of this year in the amphitheatre of the Hôpital de la Pitié, 83, Boulevard de l'Hôpital, for the theoretical part. The practical part—that is to say, practical demonstrations in electrology, X ray work, and radium work—will be held in the mornings in the laboratories of radiology and of electro-radiotherapy of the Paris hospitals. Those attending will be divided among the various hospitals in parties of ten at most. The parties will be formed at the close of the conference on Monday, Nov. 3rd. There is no subscription. Intending entrants must register with Dr. Delherm, Hôpital de la Pitié, or with Dr. Aubourg, Hôpital Boucicaut.

Attempted Murder of a Medical Man by a Madman.

Dr. Philippe, who is at present doing duty for a *confrère* at Saint Mandé, was called to see a man aged 25. Shortly before midday the medical man, on presenting himself at the address given, was received by the patient, who took him into the dining-room and offered him a paper to read. The paper contained an inconsequent jumble of words. Unsuspectingly the doctor examined the patient, auscultated him, and put a few questions. Suddenly the patient seized a couple of knives and threw himself on the doctor. The latter seized his aggressor by the wrists and with a violent effort forced him into a corner, then hurriedly escaped, not, however, before he had been wounded, though only slightly, on the hand, the left eyebrow, and the upper lip.

Burglars at the Hôpital de la Charité.

An attempt has been made to rob the strong room of the Charité, but the thieves succeeded only in carrying off some 20 francs that they found in an office drawer. An unsuccessful attempt was made to open the strong room with a false key. It has been clearly shown that the thieves could not have broken in at night, but must have been in the building, and are probably there now. Both honest men and rogues are taken care of at the hospital. Pay-day for the *personnel* is on the 29th of each month. On the 28th the cash—some 50,000 francs—is brought from the bank and placed for the night in the safe. The thieves were certainly acquainted with this detail, since they attempted their *coup* on that day. But the 28th being a Sunday the money had not been brought, and the strong room contained only the remainder from the last pay-day.

Oct. 6th.

GUILD OF ST. LUKE.—At the annual service of the guild, which will be held in St. Paul's Cathedral on Tuesday, Oct. 21st, at 7.30 P.M., the sermon will be preached by the Rev. Canon Arnott, F.R.C.S., rector of Beckenham. Admission will be by ticket, to be obtained from the Provost, Mr. George Cowell, F.R.C.S., 24, Harrington-gardens, London, S.W. A stamped addressed envelope should be enclosed with the application.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Statistics of Cancer.

ACCORDING to Professor Behla, one of the medical members of the Prussian Statistical Office, the number of deaths from cancer has again increased in 1912 as compared with the preceding year, 30,045 deaths from cancer having been reported in 1912 against 29,473 in 1911. The increase in cancer mortality has been continuous during recent years, whilst the death-rate from tuberculosis is constantly decreasing. New methods of treatment have thus failed to produce a decrease in the mortality, and it will be of interest to see from future statistics whether this will continue to be the case after the introduction of modern radiotherapy. Professor Behla draws attention to the remarkable fact that the cancer mortality of the year is always greatest in the autumn.

A Municipal Subvention to the Berlin Medical Society.

The Berlin Medical Society has hitherto not been in possession of premises of its own, the Langenbeck House, where the meetings take place and where also the offices and library are accommodated, being the property of the German Surgical Association, and only rented from them. The Langenbeck House has long since proved much too small for the increasing number of members of the Medical Society, and the society has therefore decided to build a new house of its own, to be called the "Virchow House." The purchase of a site in the medical quarter of Berlin, however, has exhausted the funds at the disposition of the society, so that but little money is left for the cost of building. The committee of the society some time ago petitioned the municipal authorities of Berlin to grant to the society a subvention on account of the valuable work done by the society for public health. The town council has, indeed, after a thorough discussion, decided to grant the request and to give to the society an annual sum of £500 for five years, beginning with Oct. 1st, 1914, and further, to lend the sum of £50,000 on mortgage on the premises. In this way the Medical Society is at once relieved from its financial difficulties and will be able to begin building the new premises. This generous decision of the Berlin municipal authorities is highly appreciated in medical quarters. The plan of cooperating with the German Surgical Association in constructing a large house to be used in common has been abandoned, the negotiations for that purpose not having led to any practical result, although the Langenbeck House also is much too small for the Surgical Association, so that their last two meetings had to be held outside the Langenbeck House in a large concert hall.

The Noise in Modern Hotels.

Professor Oppenheim, the well-known specialist for nervous diseases, has been drawing public attention to certain drawbacks connected with modern hotels, notwithstanding the great progress made in their construction and management. He refers to the noise produced by lifts and by the hot-water arrangements for a great number of bathrooms and lavatories. Matters are made worse by the thinness of the partitions between the hotel rooms, which allow every noise in the neighbouring rooms to be heard, notwithstanding double-doors and double-windows. The situation of the leading hotels in busy thoroughfares does not favour quietness, and in the back rooms the noise is sometimes as annoying as it is in front. But the greatest nuisance of all is the excessive supply of music. Formerly musical performances took place only in the evening and in certain hotels; nowadays every hotel, from the fashionable ones in the great cities to the more unpretending inns in remote mountain places, has its house band, which performs at least twice a day. Music, as Professor Oppenheim says, is truly a great delight, but only under certain conditions, and the individual hotel resident should have the choice whether he wishes to hear music or not, whilst under present conditions he has no means of escaping it, even should he prefer to seek quietude in a retired corner. The hotel managers, Professor Oppenheim suggests, should discuss the question at their forthcoming congress; he is certain that it would be a great comfort to many of the guests, especially to those in a nervous condition, if they would alter the present noisy state of things.

Oct. 6th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

An International Congress against Alcohol at Milan.

THIS is a season of congresses, of which perhaps the most important has been the International Congress against Alcohol, inaugurated at Milan on the 22nd of last month. The Onorevole Falcioni, Under Secretary of State, represented the Government and welcomed the delegates, who included representatives of 28 different countries. The committee had kept in view the most important point of the alcohol question as it affects this country, and instead of inviting the Congress to philosophise over the vice of inebriety and enthuse over the virtues of abstinence they had placed before it the economic problem, vital to Italy, of the utilisation of the fruit of the vine apart from the production of alcohol. It appears that the work of Italians has gone far towards the solution of this problem in the preparation of a grape juice concentrated by a cold process. This gives an economical, pleasant, and nutritious drink containing phosphorus in combination as lecithin and nuclein in proportions much higher than in wine. Experiments have shown the ease with which it is assimilated and proved its nutritive value for children and delicate subjects.

The Congress of Sciences at Siena.

Another interesting congress has been that of the sciences held at Siena last week. Medical sciences were well represented. Professor Sclavo's address on the Rights of Hygiene was an outspoken criticism on the state of affairs obtaining here. He told an amusing story of a doctor who, having obtained funds for the acquisition of a site for a home for children with a tendency to tuberculosis in a fine position overlooking the sea, received a summons to the prefect, who advised him to drop the project as he would never allow him to open an establishment of such a kind, so full of danger to the fish in the sea below! Professor Sclavo found both medical men and engineers deficient in education in matters of public health, and deplored the great waste of public money which this ignorance has caused. Professor Centanni reported some original observations on the behaviour and development of tissues in artificial conditions. Making use of a modification of Carrel's technique, he had studied the means to stimulate the growth of tissues and to produce pathological formations. He expressed the conviction that this line of research promised important practical results. For the entertainment of the congress the municipal authorities arranged a third performance of the "Palio," the mediæval horse races, of which the usual two performances take place in July and August in the Piazza del Campo.

Oct. 4th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Canadian Public Health Association.

AT the third annual congress of the Canadian Public Health Association, held in Regina, Saskatchewan, on Sept. 18th, 19th, and 20th, under the presidency of Dr. John W. S. McCullough, chief health officer of Ontario, a resolution was adopted affirming that advanced cases of tuberculosis could be treated in general hospitals without the danger of infection to other patients, providing proper arrangements were made, and copies were ordered to be sent to the Provincial Governments, asking that provision be made in all hospitals receiving Government aid. A resolution was adopted also asking the Dominion Government to take into consideration the danger to the public health through the yearly increasing number of immigrants from European countries into Canada. The following officers were elected for 1914: President, Dr. M. M. Seymour, Regina. Vice-presidents, Dr. J. D. Page, Quebec; Dr. T. Aird Murray, Toronto; and Dr. Duncan Anderson, Toronto. General secretary, Dr. Lorne Drum, Ottawa. Treasurer, Dr. G. D. Porter, Toronto. Fort William and Port Arthur will be the place of meeting in 1914.

Sanitary Services Convention, Quebec.

The fifth annual conference of the Sanitary Services of the Province of Quebec was held in Montreal during the week

ending Sept. 20th, and presided over in the absence of the chairman of the Quebec Board of Health, Dr. E. P. Lachapelle, by its secretary, Dr. E. Pelletier. Dr. J. E. Laberge, of Montreal, insisted that instruction in hygiene should be made compulsory in all the schools of the province. He outlined 12 lessons, which could be subdivided into four parts, so that ample time could be devoted to all phases of the subject. At an evening session, Dr. T. A. Starkey, Professor of Hygiene in McGill University, gave a public lecture on the Responsibility of Municipalities in carrying out Sanitary Measures, which was followed by another lecture by Dr. C. N. Valin, Professor of Hygiene in Laval University, on the Advantages of Public Hygiene. Dr. A. Simard, of Quebec City, dealing with infant mortality, said that at least 2000 babes could be saved from death in that province with better care, proper sanitation, and hygiene. The conference also advocated the proper medical inspection and supervision of school children in all the elementary schools of the province.

Public Health Legislation in the Province of Quebec.

The Provincial Board of Health of the Province of Quebec was first organised in 1887, Dr. Lachapelle, of Montreal, being appointed president, and Dr. Pelletier, of Quebec City, secretary. After 26 years these two officers still continue in control of health matters in that province and to them is due the credit of the excellent Public Health Acts now in force. The board consists of nine members, four of whom must be physicians. In 1910 it was decided to divide the province into ten health districts, and six of these districts have since been organised with medical men in charge located in each district. All medical inspectors are required to hold a diploma of public health and to pass an examination prescribed by the Board of Health. Special attention is given to small-pox—always a menace throughout that province—and the Vaccination Act provides for vaccination in the first year after birth, and revaccination both in the eleventh and twenty-first years. During the present year in Montreal there have been 222 cases of small-pox—March heading the list with 51—and 1204 cases of tuberculosis—967 pulmonary and 237 of other forms.

Insanity in Quebec and Ontario.

In the Province of Quebec the care of the insane is under somewhat peculiar conditions, being entrusted to corporate bodies, religious or otherwise, by the Government, which makes a per capita grant for the public patients, who are allotted to the different institutions as follows: St. Jean de Dieu, 2000; Quebec Hospital for the Insane, 1257; Verdun Protestant Hospital, 515; St. Ferdinand Hospital, 145; St. Anne Hospital, 123—a total of 4040 public patients. Only Verdun makes returns of its private patients, and these number practically the same as the public patients. If the ratio in others is the same the officially insane in that province would approximate 8000. The amount paid by the Government for the public patients is $460,738.36. For the Roman Catholic institutions this is $112 per capita, while for the Verdun patients it is $142. Quebec has a total population of 2,000,000.

In Ontario for the last official year the total number of insane in the provincial institutions was 5726, 2769 being males and the rest females, a net increase of 86 for the year. The admissions for the year totalled 1247, an increase of 103; the deaths, 460, an increase of 45; and the discharges, 570, an increase of 28. The number of deportations was 258, an increase of 32, 66 being insane, 49 criminal, and 48 likely to become a charge upon the province. Manual and health work has been found most beneficial in lessening mental degeneracy, and a high standard of efficiency has been reached in the various institutions. The growth of insanity in the province is seen in the following statistics: 1882 to 1886, total 2775; in 1891, 3201; 1895, 3865; 1901, 4604; 1906, 4933; 1912, 5517. Of the 1247 admitted in the past year 890 inherited a predisposition. Of the admissions of the year 653 were men and 594 women, of whom 543 were single, 587 married, 116 widowed, and 1 divorced.

Dominion Medical Council Matters.

At the first examinations of the Dominion Medical Council held in Montreal on Sept. 7th some 66 candidates presented themselves. At the recent annual meeting the Ontario Medical Council instructed its registrar to accept Dominion registration as full qualification for licence in Ontario, subject only to the production of the necessary credentials and payment of the usual fee. Four provinces have now established reciprocity with Great Britain—namely, Quebec, Prince Edward Island, Nova Scotia, and New Brunswick. Only one province, British Columbia, has failed to comply with all the requirements of the Dominion Act. It retains the right to examine candidates for subsequent licence in that province in the final branches.

Sept. 23rd.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

Immigration Regulations.

A SERIES of regulations has recently been promulgated under the Union Immigration Act passed last session. Under these regulations the port health officer or other duly appointed medical practitioner is to be present at the examination of passengers by the immigration officer and to indicate any passenger whom he deems it necessary to examine medically before he is passed as an immigrant. Leprosy, trachoma, favus, frambœsia, syphilis, and scabies are declared loathsome diseases, bringing those suffering therefrom under the category of prohibited immigrants. The regulations provide that persons suffering from tuberculosis may be allowed to land under a permit from the immigration officer, but these permits are only to be issued at the ports of Cape Town and Durban, and on the following conditions. The place of residence and the mode of transport thereto to be subject to the approval of the immigration officer, the immigrant to report himself to the local health authority at his place of residence, and to present himself for examination by the district surgeon or other approved medical practitioner whenever required; sleeping accommodation never to be shared with any other person, and regulations by the local health authority for preventing infection to others to be observed. It is clearly the policy of the Government to discourage the entry into the Union of tuberculous persons, although very little is being done to prevent the spread of the disease in the subcontinent itself. But with no properly organised health department the regulations are likely to be applied improperly or to become a dead letter.

Reorganisation of Hospital Work in the Cape Peninsula.

The Cape Hospital Board has appointed a committee of inquiry to advise as to the requirements of the Cape Peninsula and the reorganisation of work under the new *régime*. The committee having sought the advice of the Cape of Good Hope (Western) Branch of the British Medical Association, the Association approved the formation of a clinical medical school, but as that would require some years of preparation it recommended that the board keep steadily in view the provision of a large hospital for the university medical faculty. It recommended the early establishment of a pathological department under the control of a university medical faculty, and considered it desirable that the New Somerset Hospital should be entirely reserved for free patients with a view to its development into a teaching hospital, though the site of that hospital is hardly ideal, not being in the neighbourhood of the medical school. It recommended that the honorary staff should be specialised and the principle gradually introduced of requiring the staff to restrict themselves in private practice to their specialty. Also that, when a complete medical course was established, beds should be reserved for the university professors, and that in the meantime all holders of appointments as honorary visiting medical officers be selected by a mixed committee representing the lay board, the honorary staff, and the outside profession. It further recommended that free out-patients be treated at both the New Somerset Hospital and the Free Dispensary by an honorary out-patient staff appointed for the purpose; that the four suburban hospitals should, as at present, be conducted on the lines of cottage hospitals; that maternity blocks should be attached to the teaching hospital; and that an entirely new hospital on the small ward system should be built in as central a position as possible for contributing patients. Finally, it stated emphatically

the opinion that it was unnecessary for the board to make provision for fully paying patients.

South African District Surgeons' Association.

At a meeting of the district surgeons representing all provinces of the Union recently held at East London, on the suggestion of the Transvaal District Surgeons' Association it was unanimously agreed to form a South African District Surgeons' Association, with a local committee in each province. The following provisional committee was appointed: Dr. Grinsell (Stutterheim) and Dr. E. G. Dru Drury (Grahamstown), representing the Cape Province; Dr. D. Campbell Watt (Pietermaritzburg) and Dr. J. Dodd (Ixopo), representing Natal; Dr. Moorhead (Rustenburg) and Dr. Nixon (Heidelberg), representing the Transvaal; and Dr. D. M. Tomory (Bloemfontein) and Dr. P. D. Strachan (Philippolis), representing the Orange Free State. Dr. Campbell Watt was unanimously elected the first president and Dr. Moorhead vice-president, and Mr. W. A. J. Cameron, of Johannesburg, a temporary secretary. The rectification of the grievances of district surgeons under the existing regulations, and the contemplated promulgating of new regulations curtailing many of the existing fees, were the determining causes of the new association.

Railway Sick Fund Regulations.

The long awaited new regulations for the administration of the Railway Sick Fund under Union are at last gazetted. The control of the fund is to be in the hands of a central board of 16 members, half to be nominated by the administration and half elected by contributors. No provision is made for medical representation, although it is possible that the administration may intend to nominate one or two medical men as their representatives. Subordinate to the board are to be four district boards with offices respectively at Cape Town, Bloemfontein, Johannesburg, and Durban. On these also there is no specific provision for medical representation. The objections to the regulations are very numerous. The new regulations are understood to have been compiled without reference to contributors to the fund, to the medical men concerned, or to the medical profession. It is of the utmost importance to the railway employees that their medical service should be an efficient one. The medical officer has hard work to do his duty both to the railway administration and to the patient. It is utterly impracticable for laymen unassisted by professional advice to draw up satisfactory regulations; yet this is what the railway administration has endeavoured to do. The new regulations are perhaps objected to more strongly in Natal than elsewhere. At a meeting of the Durban branch of the British Medical Association recently convened to consider the terms offered by Government for medical officers to the new Railway Sick Fund, Dr. R. K. Howden stated that he had been offered the appointment as railway medical officer to the Greyville district. There were 2380 (estimated) railway workers in this district, including wives and children of the actual employees. He was offered £500 per annum. A few extras were allowed, the chief being £2 2*s.* for midwifery cases and £1 1*s.* for anæsthetics and for consultations; also a travelling allowance of 8d. per hour when absent from headquarters on duty. He had worked out the remuneration offered, and it came to slightly less than 4*s.* 2*d.* per head per annum. With women and children included a fair estimate of the incidence of sickness would be 3 per cent., giving about 60 attendances per diem. This was more than one man could manage, and if an assistant and two motor-cars were kept it would all have to come out of the £500 per annum. Dr. Howden further pointed out that the majority of these people had previously been private patients, so that practices would be broken up and for ridiculously low rates of payment. He might well also have added that in addition there would be interminable correspondence connected with such a post. From the general discussion it was evidently the consensus of opinion that the terms were totally inadequate and should be strenuously resisted. Eventually resolutions were agreed to calling for conference with other branches as to their attitude, standing by the 12*s.* minimum rate for adult workers and adopting the principle of free choice of doctor, and informing the Central Board that members of the branch would not be allowed to negotiate individually for the posts of railway medical officer until terms were accepted by the branch and inviting a conference between the board and the branch. Dr. Howden, Mr. S. Copley, Mr. B. A. Nicol, Dr. A. McKenzie, and Dr. Duncan McKenzie were appointed a committee to deal with the matter and, if necessary, to meet a delegation from the sick fund and to report to the branch. The firm stand taken up by the Durban practitioners is very satisfactory.

Sept. 5th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Medical Research in India.

THE first number of the new Indian *Journal of Medical Research*, edited by the Director-General of the Indian Medical Service and the Sanitary Commissioner with the Government of India, is now under issue as a quarterly. It is published for the Indian Research Fund Association and takes the place of the Scientific Memoirs. Sir Harcourt Butler in a foreword says: "The time has come for the fund to have its own official organ, and the *Journal* should be a worthy record of what is being done in India for the advance of sanitary science in the widest sense of the term." Its pages will be open to all, official and non-official alike, for papers on subjects of research connected with medical and sanitary science. It is added that research work is rapidly developing in India, and Sir Harcourt Butler makes an earnest appeal to all who are interested in it to support the journal and enable it to hold a high place among the scientific journals of the world. The first number contains 16 articles dealing, amongst other things, with cholera, kala-azar, dysentery, latent malaria, &c. Photographic reproductions of certain biting insects are beautifully done. The journal, which is published by Messrs. Thacker, Spink, and Co., of Calcutta, is admirably printed on thick paper. Its price is six rupees per annum.

Hospital Accommodation in Cochin.

The Anglo-Indian community of Cochin, numbering over 3000, are making arrangements to memorialise the Madras Goverment, through the local municipal chairman, to reconsider its decision to omit the proposed European and Eurasian ward from the estimate of the new Municipal Hospital submitted by the local civil surgeon.

Infant Mortality in Bengal.

In the annual report of the Sanitary Commissioner for 1912, just published, it is stated that nearly 340,000 children under one year died in Bengal, representing a loss of 21 per cent. of the births. The figures for 1911 were just under 310,000. Calcutta has hitherto returned the highest infant death-rate—26 per cent. of births—but Jalpaiguri, with 28·69 per cent., and Dinajpur, with 26·26, are now worse. Cholera and fever have been prevalent, but infant mortality is not largely due to these diseases, but to ignorance of hygiene and want of skilled medical treatment.

Child Life in Calcutta.

A correspondent of a Calcutta paper draws attention to the fact that little children are employed in the city to descend the drains and clean them. The corporation should take the matter up and substitute more humane and up-to-date methods of cleaning the drains of the city.

The Drainage of Imperial Delhi.

The scheme for the training of the Jumna at Delhi is to be prepared in due course. The engineering difficulties are not likely to be great, and with the services available of experts in river training in India the work should be completed in two or three years. When once the Jumna has been "trained" it can be kept to channels that will leave the area now liable to flooding high and dry all the year round.

Ambulance Work in India.

General Haji Hafiz Obeidullah Khan, C.S.I., Imperial Service Lancers, has signified his intention of presenting an ambulance challenge shield to the Indian Council of the St. John Ambulance Association for competition among the units of the St. John Ambulance Brigade in India and Burma.

Tube Wells in India.

Experiments with tube wells in India are still being

carried out, and experience alone can show where they can be used with full advantage, but of their utility in some tracts there can be no question. In Vol. II. of the proceedings of the All-India Sanitary Conference at Madras a short paper by Mr. T. A. Miller Brownlie, municipal engineer of Amritsar, gives some particulars of borings and workings. His concluding paragraph is worth particular attention, for he says: "The question of the relative cost of tube wells is of no great importance when one considers that from an ordinary masonry well 12 feet in diameter, as built for modern water-supplies, the average yield is roughly 3000 gallons per hour and the cost is over £200; whereas at a less cost a tube well can be sunk which will yield 45,000 gallons per hour, or 15 times the supply of an ordinary well and under the same head." After such a statement we can fully agree with him that a considerable amount of good can be done by the installation of tube well water supplies for towns and villages of India which are in urgent need of pure water. It is to be hoped that experiments will be steadily continued and that the results gained will be made public.

Town Planning in India.

The Government of Madras has now taken steps to frame a set of rules, and has issued them for the guidance of municipal councils, to ensure that schemes for the extension of sites and the provision of house accommodation are carried out with regard to sanitary principles. Certain draft rules were first circulated amongst the various municipalities in the Presidency for their criticism. A large majority of the municipalities approved of the rules in their entirety, while several of them, like Coimbatore, Ellore, and Tanjore, made some excellent suggestions based on their own experience. The rules come into force on Oct. 1st in all except hill municipalities. All such undertakings have to receive the approval of the district medical and sanitary officer or the Sanitary Commissioner, with special reference to the suitability of the soil for building construction, facilities for drainage, water-supply, and other matters. Streets are required to be marked out on the sites, and as far as possible to run in straight lines crossing one another at right angles, and the main streets, exclusive of lateral drains, are to be not less than 40 feet, the secondary streets not less than 30 feet in width. All streets are to be metalled throughout their entire width, not merely in the centre of the roadway, and any departure from this rule is to be made only with the sanction of the Government. Conservancy lanes 10 feet in width, exclusive of lateral drains, must be formed along the backs of houses, and streets must be provided on both sides with open and impervious unshaped drains to carry off storm-water. The formation of streets and drains, it is wisely laid down, should form part of the scheme for laying out the sites, and should ordinarily be put in hand simultaneously with the execution of the scheme. In large streets the municipality will maintain suitable avenue trees on both sides of the street.

Efficient Medical Women.

The results of the examinations of the Agra Medical College seem to show that the women students are more efficient and more diligent than the men. Major E. J. C'Meara, I.M.S., in his annual report, states that 65 male students appeared at the final medical examination in April, 1913, and only 29 passed in all subjects. Out of 20 women students who presented themselves 13 passed in all subjects. Of the male failures 27 were remanded for one year and 9 were recommended for dismissal, as in the opinion of the Medical Board they are never likely to pass, and their retention is a waste of money to the Government.

Pasteur Institute for Burma.

In sanctioning the scheme for a Pasteur Institute in Burma the Secretary of State has been pleased to sanction the proposal put forward by the local Government that the balance of the grant of two lakhs by the Government of India for the purpose of erecting a bacteriological institute at Maymyo, part of which has already been devoted to the construction of a combined chemical and bacteriological laboratory at Rangoon, shall be applied to the provision of a small bacteriological and serological laboratory in connexion with the Pasteur Institute at Rangoon and the construction of quarters for the director.

Sept. 20th.

Obituary.

WILLIAM CARNEGIE BROWN, M.D., C.M. ABERD., M.R.C.P. LOND.,

PAST SECRETARY OF THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

THE death of Dr. W. Carnegie Brown has removed one who had done much to draw together the groups of individuals interested in the study of tropical medicine, owing to the important part which he took in the formation and development of the Society of Tropical Medicine and Hygiene, and at his funeral on Oct. 2nd the society was represented by Sir Ronald Ross, past president of the society; Dr. F. M. Sandwith, vice-president; Dr. T. P. Beddoes, and Dr. C. F. Harford, one of the present honorary secretaries. Dr. Sandwith also represented the London School of Tropical Medicine, and a wreath was sent by Sir Patrick Manson, the first president of the society.

William Carnegie Brown received his medical education mainly at Aberdeen, though he also studied at St. Thomas's Hospital. He took his M.B., C.M. Aberdeen in 1880, and after that saw something of life abroad by serving as medical officer of the White Star and P. and O. lines. In 1884 he took his M.D. degree, and from 1885 onwards he was medical practitioner in Penang, in the Straits Settlements. Here he gained good insight into tropical diseases, and, being a careful observer, made a study of some of the principal diseases that are met with in that part of the world. His chief contributions to the literature of tropical medicine, published since his return home, have been two books, one on "Sprue and its Treatment," which was published in 1908, and the other on "Amœbic Dysentery, its Complications and Treatment," published in 1910. Both of these books give a very good summary of the knowledge available concerning these two diseases at the time of writing, and it will be admitted that both these subjects are worthy of a good deal more consideration than has been generally accorded to them.

In the year 1904 he returned to England and took rooms in Harley-street, and at once associated himself with workers in tropical medicine. In 1906 he became a Member of the Royal College of Physicians of London, and in 1907, when a movement was started to found a new Society for the Study of Tropical Diseases, Dr. Carnegie Brown was chosen with Dr. Sandwith to be one of the honorary secretaries. By his tact and hard work he contributed largely to the success of the new society and gained the confidence of all his colleagues, and he continued to hold the post of secretary of the society until his health failed in the summer of 1912, when he felt obliged to resign his office. As a matter of fact, for some time previously he had been failing in health, but he stuck to his post with the greatest zeal, even though he did so at great cost to himself. The fact that there are at the present time 608 Fellows of the new society, although it has only been in existence six years, is the best monument to the indefatigable labours of Dr. Carnegie Brown. Many difficult questions came up for consideration by the society during his term of office, and nothing exercised him more keenly than the negotiations which took place between the Royal Society of Medicine and the Society of Tropical Medicine and Hygiene on the possibility of amalgamation. Dr. Carnegie Brown felt most keenly the seriousness of the problem, and he was of opinion that the cause of tropical medicine, represented as it was by medical men scattered throughout the world, needed a special society to represent its interests. He was not identified with any of the teaching schools, and therefore he could act in a specially disinterested manner, and this fact lent great value to his services. His good judgment in arranging the programme of the session and in securing papers from those best qualified to deal with particular subjects was most noticeable, and he has left behind him a record of patient and persevering work which cannot fail to act as a stimulus to his old colleagues and to all who remember him.

Dr. Carnegie Brown leaves a widow, three sons, and three daughters.

DAVID MOUNT HUTTON, B.Sc., M.D., C.M. EDIN.

BORN in Liverpool of Scottish parents 43 years ago, David Mount Hutton received his primary education at preparatory schools in St. Andrews and Edinburgh, and with a sound equipment in literature, classical, English, and German began professional study at the Edinburgh University, first in science, in which he graduated B.Sc. in 1892, and thereafter in medicine proper, taking the M.B. and C.M. degrees in 1895, and finally the "summi in medicinâ honores" with honours in 1899.

So qualified, he entered immediately on general practice at Southport-cum-Birkdale and rapidly acquired the confidence of a large *clientèle*, thanks to the very thorough clinical training he had undergone as resident physician in the Edinburgh Infirmary, and also as physician in the Royal Children's Hospital in the same school. In quick succession he became medical referee to the Scottish Provident among other insurance companies, Fellow of the Royal Society of Medicine, and an active member of the North of England Obstetrical and Gynæcological Association, as also of the Society for the Study of Children's Diseases. Latterly, amid much strenuous professional work, he interested himself in the movement, now progressing under Government auspices, for the Care of the Feeble-minded, aiding it effectively on the platform and in the press, while acting as President of the Southport Branch of the Lancashire and Cheshire Society organised in the same philanthropic interest. He even found time for enriching the literature of the profession by articles such as that on Myiasis, published in the "Encyclopædia of Medicine"; on a Case of Syphilis Transmitted to the Third Generation, printed in the Transactions of the Society for the Study of Children's Diseases; on Accidental Parasitism of Dipterous Larvæ in the Human Body, contributed to the Liverpool Medical Society's Journal; on Some Therapeutic Applications of Chloretone; and on the theme he had made peculiarly his own, the Care and Control of the Feeble-minded—a very favourably received paper published in the "Special Schools Quarterly."

Fifteen years of such work, rarely and never adequately relieved by respite or holiday, began, however, to tell on a constitution in the main robust, but not proof against the handicap of an anxious temperament and a sense of duty that never spared itself. Premature breakdown became more than ominous, insomuch that preparations were on foot for a six months' *villeggiatura* in Italy. But—*Dis aliter visum*. The project indeed had barely been initiated under a medical friend's roof near London, when suddenly, if not quite unexpectedly, he succumbed to heart failure on Sept. 21st. "And so," writes a valued correspondent of THE LANCET who knew Dr. Hutton intimately, "there 'went down while it was yet day' the 'sun' of a guileless and generous nature which, devoted—mind and soul—to the medical calling, 'knew its art but not its trade,' finding its true honorarium in the gratitude it earned not only by the skill acquired in the schools but by the *sagacité de cœur*, which is the precious, the distinctive possession of the born physician."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. A. van der Loeff, formerly inspector of the medical service in West North Brabant and Zeeland, aged 71.—Dr. P. Alt, privy sanitary councillor of Charlottenburg.—Dr. F. Deus, sanitary councillor of Berlin.—Dr. A. Pitschpatsch, sanitary councillor of Sagan.—Dr. A. Thorwith, sanitary councillor of Berlin.—Dr. Julius Preuss, of Berlin, whose contributions to the press on the subject of Jewish medicine in history are of great and universal interest. His latest work, which includes most of his previous researches, was "Biblisch-talmudische Medizin." His age was 52, and he held the rank of sanitary councillor.—Dr. Theodore S. E. Schaepkens van Riempst, lecturer on genito-urinary diseases in the New York Polyclinic Medical School and Hospital.—Dr. John P. Pardue, formerly professor of materia medica and hygiene in the St. Louis College of Physicians and Surgeons.—Professor Robert Kutner, director of the Kaiserin Friedrich Haus, Berlin, and general secretary of the International Committee for Post-graduate Medical Education.

Correspondence.

"Audi alteram partem."

THE PATHOLOGY OF THE CONDITION KNOWN AS PARASYPHILIS.

To the Editor of THE LANCET.

SIR,—The extremely interesting and highly scientific paper by Dr. J. McIntosh and Dr. P. Fildes in THE LANCET of Sept. 27th tempts me to write a brief note on the subject as it presents itself to one who has had a certain amount of clinical experience and training, but very little experience of, or training in, modern precise methods of microscopical and biochemical research.

I would first mention three small items of great interest to myself, and of what I consider great clinical importance. The first one is a statement made by the late Sir Jonathan Hutchinson when teaching a class of students of whom I was one. He said that he had watched a patient for many years whose sole indication of tabes dorsalis when first seen was the absence of knee-jerks. He had, in the course of time, developed the other classical features and had ultimately died from progressive nerve trouble. I had then, and have not now, any reason to doubt his statement.

The second item is a fragment of a conversation I held some seven or eight years ago with my late colleague, Harold Barnard, who said to me, "Smith, what is your rule and teaching about administering mercury to patients suffering from disease and whom you suspect to have had syphilis at some previous period upon which the present symptoms may possibly depend?" I replied very promptly, "I teach and practise that in all such cases mercury should be very freely and promptly administered, and that iodides might also be given, but mercury never under any circumstances omitted." "How do you give mercury?" he asked, and my reply was, "Invariably by inunction of the ung. hydrarg. of the B.P." I have seen no reason to depart from my teaching or to alter my rule.

The third item is a case from my private practice. In November, 1895, I was asked by Dr. J. J. Coulton to see a patient then aged 33, who had acquired syphilis "in the year of the Paris Exhibition." (So my note runs. I have no reference by me to fix what this year was.) Subsequently, he had suffered from gumma of the testicle, but "all seems to have cleared up," and he was well till three days previous to my first consultation, when he was suddenly seized with aphasia and amnesia, could not write at all properly, began words and could not finish them, used wrong words, &c.; these symptoms had improved under K.I., with which his medical man had treated him. I have a few more notes on his nervous system, but they are not very material. I heard in March, 1896, that he had got quite well after three months of mercurial treatment combined with potass. iod. In October, 1897—i.e., nearly two years later—I saw him again with some acute illness which at the time I thought was typhoid fever, but as he had some nervous symptoms (slow syllabic speech, mind far from clear, &c.) which did not seem to be accounted for by typhoid fever, I ordered ung. hydrarg. to be rubbed in. I saw him again a fortnight later, and my note runs: "No doubt now about G.P.I. He has been made Lord S. and has acted in Germany at £1000 a night, and has £250,000; the only thing is his pupils react readily to light, but then they oscillate. His speech is very drawly and characteristic." By Nov. 10th he had had 30 inunctions of mercury; had quite lost his delusions. "His lips and speech are very characteristic of G.P.I. and his knee-jerks are greatly exaggerated; his pupils react steadily to L. and A." By December, 1897, quite sound in mind. K.J. ++. Pupils react fairly, but not absolutely as they ought to do. In 1898 he came to me to ask advice as to the frequency with which he ought to indulge in sexual connexion; desire and power both in excess. In 1899 my note runs: "Feels very well. Hands quite steady; mentally clear; good head for business. K.J. natural and equal; pupils react readily to L.; tongue quite steady." In 1901: "A bit below par. K.J. slightly glib. Pupils react readily to L. and A." In 1906: "Health excellent. K.J. both fairly free." I have not seen the patient since then, so that he may have died in the interval, and that, too, from G.P.I.

I leave these items for a moment to mention the views that I adopted in my student days and taught when I reached a position of responsibility to students and still teach—viz., that if parasyphilitic had any meaning at all it was intended to convey the idea that active syphilisation had ceased, but before ceasing had produced such disturbing effects upon lymph- and blood-vessels as to diminish the food-supply to, and removal of waste products from, the nerve fibres or cells to such an extent that the cells, and therefore the fibrils dependent on the cells, slowly but surely, and usually progressively, perished. All this seemed to me a legitimate deduction from what was then known of the power of syphilis to produce what was termed syphilitic endarteritis—a process that resulted in diminishing the calibre of the vessel below its optimum. I had then no suspicion that the microbe of syphilis could still be alive, and could be continuing to produce toxins having a primary deleterious action upon nerve cells.

It would make my comments too long to pass in review, as Dr. McIntosh and Dr. Fildes have so ably done, the various stages in the controversy regarding parasyphilis, but I would like to contradict flatly, by my own experience, the statement that "the result of treatment is *nil*." Your authors dispute the statement, and my experience confirms their view, but there must, of course, be added the proviso that treatment by mercury must be undertaken early, and often, indeed, while the evidence of syphilis is still doubtful. (I do not wish here to enter upon the value and importance of the Wassermann reaction, because I hold the view that mercury is useful in other conditions than syphilis, and therefore treatment can do no harm and may be of immense good even if syphilis be not a factor in the trouble.)

I would like to ask Dr. McIntosh and Dr. Fildes for a critical consideration of my case mentioned above; to call it a "particularly toxic secondary encephalitis," and to refuse it the name of "early general paralysis" seems to be somewhat of an anomaly.

I would like, Sir, in conclusion, to ask them also whether I am correct in saying that the most elaborate investigations of modern research do not contradict in any essential particular my view of what one ought to teach students. By essential I mean affecting the chances of the patient's cure. Or would they urge me to wait for the results of a Wassermann before resorting to mercury? (I do not wish to enter into any controversy as to the relative merits of mercury and neosalvarsan for the cases I am considering.) It seems to me that modern pathology rather supplies a firm basis of ascertained facts for my practice, a position of affairs which naturally gives me great satisfaction; and I shall conclude that it is never, clinically speaking, too late to apply antisyphilitic treatment.

I am, Sir, yours faithfully,

F. J. SMITH, M.D.Oxon.,
Physician to the London Hospital.

Harley-street, W., Oct. 2nd, 1913.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Sept. 27th you printed a contribution from us entitled "The Pathology of the Condition known as Parasyphilis." In this paper we put forward the view that dementia paralytica was merely the expression of tertiary syphilis of the brain. The condition differed from the gummatous processes confined more or less to the lymph vascular tissues, in involving chiefly or entirely the nervous substance proper. The wide extent of the lesion resulting from a minimal number of spirochætæ was due to the fact that the patient was in a "tertiary" condition—in other words, because his tissues were hyperimmune (hyperallergic) to the virus. Acute encephalitis was a lesion pathologically similar, but since its onset was relatively early after infection the tissues had not become hyperimmune, and thus a marked spirochætosis produced relatively little reaction and destruction.

We wish now to mention that Professor Noguchi, in the current number of *La Presse Médicale* (Oct. 4th), demonstrates that normal rabbits are insusceptible to intracerebral inoculations of spirochæta pallida. If, however, the animal is sensitised by repeated intravenous injections of spirochæta pallida, an intracerebral inoculation will then produce the lesion of dementia paralytica. Noguchi's investigations appear to supply the experimental evidence which is at present lacking in our purely inferential study.

We are, Sir, yours faithfully,

JAMES MCINTOSH.
London Hospital, Oct. 6th, 1913. PAUL FILDES.

THE NATIONAL INSURANCE ACT: THE APPOINTMENT OF MEDICAL REFEREES.

To the Editor of THE LANCET.

SIR,—Medical men of all ranks are frequently asked by insurance offices or employers to examine claimants who allege that they are suffering from either accident or disease, and it is one of the settled ethical laws which govern the profession that, knowingly, no medical man shall examine the patient of another medical man except in consultation or after having first obtained his consent.

House surgeons and general practitioners continually meet medical examiners acting for insurance offices, but they decline to do so unless they are paid the usual consultation fee of £1 1*s*. The most recently qualified house surgeon will decline to attend a consultation or to write a report under the fee of £1 1*s*. General practitioners all over the country receive the same fee, if not more, for their loss of time, care, and responsibility, when called upon to give at a consultation a detailed history of a case. The Home Secretary, in fixing the fees of medical referees under the Workmen's Compensation Act, fixed a fee of £2 2*s*. as the fee for a medical examination and report to a county court judge, and no one has ever hinted that this sum is excessive.

Bearing in mind the above facts, the question arises as to what should be the attitude of the profession in regard to the appointments of medical referees by Local Insurance Committees, either at small salaries or at fees hitherto unheard of for the class of work required and without any published regulations safeguarding the ethics of the profession.

The London Insurance Committee have appointed six medical referees for the county of London, and these practitioners have presumably agreed to make visits, hold consultations with panel doctors, and write reports for the information of the Insurance Committee at an inclusive fee of 7*s*. 6*d*. per case, on which reports the standing, knowledge, and experience of the panel doctor are to be adjudicated on by the committee, as is also the character of the insured persons whose *bona fides* is in question. These latter persons will be at the mercy of an Insurance Committee solely dependent for its information on the report of a medical referee, and they may be branded as malingerers or exaggerators by the committee in a manner which may affect their whole future lives.

Six medical practitioners have accepted this enormous responsibility at a remuneration of 7*s*. 6*d*. for each consultation, examination, and full report, and it seems most improbable that any of these gentlemen, who have accepted these appointments, have realised their onerous and responsible nature or the time that must be given to each report if justice is to be done to the parties interested, or that they have satisfied themselves that regulations have been made for the obtaining in each case from the panel doctor in charge a full and exhaustive history at a consultation to be attended by the panel doctor, on terms satisfactory to himself and the profession.

If such regulations have been made the profession has a right to ask that they may be published in the medical press, so that every medical man on a panel may know exactly how he stands under the regulations, having regard to the ethics of the profession. It may be that medical referees appointed by the Insurance Committee are merely intended to advise in the first instance on a short form, but even if so, and if there is to be a right of appeal either to the Insurance Commissioners or to medical referees appointed by the Commissioners under the powers they hold under the National Insurance Act, yet even then it is most essential that the reports of medical referees to the Local Insurance Committee should be thoroughly well considered and written

under a due sense of responsibility. It is generally understood that after the report of the Departmental Committee now sitting the whole question of medical referees, both under the National Insurance Act and the Workmen's Compensation Act, will be carefully considered, and no doubt the following three questions will be kept in view: (1) Whether the decisions of medical referees shall be as now, "final and conclusive," or whether they shall be subject to appeal; (2) whether they shall be whole-time officers or part-time, payable by fees, as at present; and (3) whether a simplification of procedure and a saving of expense could not be effected by the appointment of one body of medical referees to examine and report under both the Workmen's Compensation Act and the National Insurance Act.

It will be generally felt that with a more extended use of medical referees, especially if their decisions are to be "final and conclusive" and if they are to have the confidence of the profession, they should be men of ripe experience, not only in the various kinds of medical practice, but especially in the examination of persons claiming to be incapacitated by either accident or disease, and that they should be men of tact, well used to meeting every kind of medical practitioner in consultation.

I am, Sir, yours faithfully,

South Hampstead, N.W., Oct. 4th, 1913. ALBERT BENTHALL.

THE DISCOVERY OF THE RADIUM-MESOTHORIUM CURE OF CHRONIC DEAFNESS OF THE HOPELESS KIND.

To the Editor of THE LANCET.

SIR,—Among the seriously inaccurate statements that have quite recently been made in the lay press in regard to treatment by radium and radio-active agencies that alleged to have emanated from the "Medezenalen Klinik" in which Dr. Hugel, of Berlin, is credited with having discovered the curative effects of radium and mesothorium in chronic deafness, is one that cannot be allowed to pass unchallenged.

Having in October, 1908, observed and realised the curative effect of what I had provisionally termed the "ultra-X rays" in a cast of chronic deafness in a hospital out-patient, who was being treated under my directions for specific gummata of the tongue, obliquely through the open mouth, a second case that had been otologically examined and given up as hopeless, being that of an acquired deaf-mute, was experimentally subjected to a similar course of "ultra-X ray" treatment with very satisfactory results. Both cases were subsequently exhibited at the hospital clinical meetings, and were duly published.

As two such exceptional experiences were not sufficiently conclusive they were subjected to the test of time, and the experiments were repeated in a few similarly hopeless deaf cases in 1909. During this year I also began to treat some with a plaque of radium bromide which I fixed over the mastoid process, and later the radio-active mineral autunite was introduced into the meatus in 1 centigramme metal capsules. In April, 1910, I brought forward two of the originally deaf patients before the Neurological Section of the Royal Society of Medicine, in order to illustrate what I then termed the neurogenetic effect or amœboidism induced by these radiations in nerve terminals. Owing to the large number of cases that were exhibited on that occasion the exhibition of mine was unavoidably deferred.

This experimental research was, however, continued without intermission in spite of the obstacles that presented themselves. By August, 1912, having had a large and convincing experience, I submitted the notes of a few of these cases to THE LANCET. The Editor courteously replied in returning my notes, and suggested that my cases had better be exhibited and discussed at one of the medical societies before publication. Accordingly, in November, 1912, the notes of my eight earliest cases (five of which were originally deaf-mutes) were submitted to the president of the Otological Section of the Royal Society of Medicine. After a few days he expressed his interest in the notes and kindly offered to introduce me to the meeting when the time arrived. Not being an otologist or a member of that section, I was informed that the notes would first have the consideration of the council before a date could be fixed for their discussion. This date was finally fixed for Feb. 21st, 1913, three months later.

At the eleventh hour, however, after the circulation of the notes on the agenda paper of the meeting, certain of the members of that section raised a protest to the president, threatening to resign and form another otological society if my cases were examined or discussed. The president, under these circumstances, reluctantly complied with their demands, and I was requested to cancel by wire my invitations to my patients, but this I could not bring myself to do; the patients were there, also a few medical men concerned in them, but they were not examined or discussed, to the consternation of many. I had the honour, however, of introducing some to the president.

Since this incident in the research that matter has been in the hands of my legal advisers. The experiments were continued, and in June last, at the invitation of the British Otolaryngological Society, I was able to exhibit four further cases that had been otologically tested both before and after a four months' course of treatment. A report was published in THE LANCET of July 26th last at p. 223, which speaks for itself. For this kind aid I desire to thank the Fellows of this society.

As the identical relationship of the radiations emanating from radium and mesothorium with those from such a Crookes's tube to the discharges from which I have provisionally applied the term "ultra-X" to may be questioned by some practitioners, permit me to describe that association briefly. Radium and mesothorium are elements both of which discharge the long beta and the gamma radiations, the "surpenetrans" of Dominici, but the enclosing metal or filter that is used to cut off the inevitable short radiations that damage the skin structures has, set up within the molecules of the metal, new secondary radiations of short length, the action of which has also to be provided against by more dense covering, other factors need not here be mentioned. A Crookes's tube that becomes useless for superficial therapeutic purposes, after repeated regenerations, the vacuum being now very high, it ceases to discharge the short radiations, though the long beta and gamma radiations continue to be discharged for some time longer with proper management, while using a heavy current and a spark-gap of from 10 to 12 inches. At this stage there is no difference therapeutically between these types of radiations from the sources under consideration. There is no primary necessity for protecting the skin from the action of these ultra-X rays. No metal filter being applied to the skin, there are no secondary radiations generated at the skin. An aluminium filter or thick leather disc is used in the path of the rays, at some distance from the skin surface, as a precaution against the occasional softening of the tube by heat at the anode when the cooling device fails. This valuable deep therapeutic feature of a high Crookes tube has not been known to medical science hitherto.

I am anxious to invite discussion which may help us nearer to the truth which we are all seeking.

I am, Sir, yours faithfully,

Gloucester-place, W., Oct. 7th, 1913. H. D. MCCULLOCH.

AURICULAR FLUTTER.

To the Editor of THE LANCET.

SIR,—I have read with much interest Dr. J. Hay's narrative of two cases of auricular flutter in your issue of Oct. 4th, but my object in writing you on this occasion is not to offer any comment on the suggestions it contains either as to the nature or treatment of that condition. To do so satisfactorily would require more space than you might feel disposed to grant and involve discussion more suited to a longer article. The subject, however, is one of increasing interest, and a considerable number of cases of the condition in question have now been observed—30 in all, according to Dr. W. T. Ritchie in his valuable article just published in the *Quarterly Journal of Medicine*. For personal reasons I have some reluctance in troubling you even with the note I am about to write, but statements of fact, however pardonably erroneous, are apt to become stereotyped if left uncorrected.

The first case of non-drug auricular tachycardia recorded

was one mentioned by myself in an address given in October, 1908, and published in THE LANCET of Jan. 9th, 1909. It was under my care in the Great Northern Central Hospital in 1903, and was associated with audibility of the extra auricular systoles as well as with their reproducibility by the graphic method.

Dr. Ritchie recorded a high rate of auricular pulsation still earlier[1] in a case of ventricular bradycardia, but the auricular speed in that case followed the administration of atropin, and he refers in his last paper to another case published by the late Dr. G. A. Gibson. These observations were all made prior to those on the interesting and important case recorded by Dr. Herz and Dr. Goodhart in January, 1909, not in 1908, as stated in Dr. Hay's paper.

Dr. Ritchie mentions that in his atropised case of accelerated auricle no auricular sounds were heard. The audibility of the sounds in my case, which I described to the Æsculapian Society on Dec 13th, 1908, as "jugular embryocardia,"[2] was probably owing to the comparatively slow rate of the massed rhythmic auricular extra systoles, as I consider them to be, in spontaneous cases and to their force. The auriculo-ventricular ratio was as 2 to 1. The higher the auricular rate and the more nearly the pulsations approach the impotence of auricular fibrillation, into which they may apparently at times pass, the less audible in all probability are the auricular sounds likely to be.

I am, Sir, yours faithfully,
ALEXANDER MORISON.

Upper Berkeley-street, W., Oct. 6th, 1913.

LOW-PRICED CLINICAL THERMOMETERS.

To the Editor of THE LANCET.

SIR,—The variations in the readings of the thermometers described by Dr. J. B. Cook in his letter in your issue of Oct. 4th are not necessarily indications of faulty instruments. It is possible to immerse a dozen quite reliable instruments in warm water and obtain as many different readings. In performing the test, among other precautions to be observed one should ascertain that the thermometers have been well "shaken down," that the water is maintained at a constant uniform temperature, and that the instruments do not touch the bottom or sides of the vessel. Of the many dozens of clinical thermometers examined here the percentage of rejections is very small indeed, and the greatest error observed has not exceeded one degree.

The price of 10*s.* 6*d.* per dozen cannot be described as cheap, for accurate 2 min. and ½ min. thermometers can be purchased from makers at far less than 10½*d.* each, while 1 min. thermometers fitted with a lens front and verified at Kew are obtainable at less than 2*s.* each. Dr. Cook does not state whether he ascertained the behaviour of the thermometers when used to take the temperature of the body.

I am, Sir, yours faithfully,
F. A. HOCKING,
Pharmaceutist to the London Hospital.

Oct. 4th, 1913.

DISTRIBUTION OF INSURED PERSONS UNDER THE CAPITATION SYSTEM.

To the Editor of THE LANCET.

SIR,—In your report of the last meeting of the London Insurance Committee you mentioned that Mr. E. B. Turner rose to correct my statement as to the Manchester scheme. I have this morning received a letter from Dr. J. H. Taylor, of Salford, and with his permission I venture to ask you to print the following extracts from that letter :—

> I notice that according to the *B.M.J.* supplement, p. 286, Mr. Turner says you were in error about the Manchester scheme. As a matter of fact, it is he who is altogether wrong. We have a panel in Manchester and Salford in every sense of the word and as defined in Regulation 7. All the doctors on the list had to sign an agreement conforming to the Act and Regulations and the conditions of the Parliamentary grant, and the Commissioners refer to us as the panel. It is quite true that the Local Medical Committees do not like the word panel, and so they use the word "list," but it is a sort of *placebo* which they use with a nod and a wink.
>
> Again, Mr. Turner said that the Manchester Insurance Committee handed over the whole of the Medical Benefit Fund to the Local Medical Committee. If he meant exactly what he said it is another pious delusion like the first, which he may have heard in Manchester. Your own statement was far more correct than his. What really happens is as follows, and I speak with certainty here as a member of the Salford Insurance Committee appointed by the Commissioners. The system in Manchester is a copy of the Salford system, and in neither case is a single farthing handed over to the Local Medical Committee. The whole Medical Benefit Fund, that is 8*s.* 6*d.* per insured person (*less* a few contributions to persons receiving treatment through institutions and to persons making their own arrangements, who are very few in number), is divided up into three funds—13/17ths going to the panel fund, 3/17ths to the drug fund, and 1/17th to the drug suspense fund. To the panel fund is then added 6*d.* per person for domiciliary treatment of tuberculosis, which forms the medical treatment pool out of which the doctors are paid per attendance. The important point is that the whole of this pool is paid to the doctors, except that at each payment-on-account a very small sum has been kept in hand by the Insurance Committee, partly because a number of the doctors neglect to send in their accounts in time, and partly because it is impossible to tell beforehand the exact total for the year owing to the variation in the total number of the insured, and thus with payment-on-account in advance something must be kept in hand, but the amount is quite insignificant, and at the end of the year the full total will be distributed. In Salford only £61 was retained in hand on July 31st out of a total pool that will certainly be over £28,000 for the year. Practically, then, you were quite correct in saying that the whole fund available for medical treatment of the whole of the insured is paid to the doctors. Of course you know that the doctors have no lists as you have with your capitation system. We know nothing of the insured until they actually come to us for treatment, and they are allowed to go to any doctor, changing from one doctor to another as they like, Regulation 18 not being enforced. This, by the way, tends to increase the malingering, because if one doctor refuses a certificate the person simply goes about till he can find some other doctor ready to give a certificate. It is somewhat farcical for Mr. Turner to say that the money is handed over to the Local Medical Committee. All that committee does is to scrutinise the doctors' bills, and it has the power, which is often used, to cut down any doctor's bill when his attendances have been above the average, as excessive attendances would, of course, unfairly deplete the pool. When the bills have thus been checked they are sent to the clerk of the Insurance Committee, who again checks them to see that none but insured persons have been included, and the clerk then presents them to the Insurance Committee, which may pass them for payment. Of course, the Local Medical Committee has nothing to do with the drug fund. Up to the present the whole pool has only sufficed to pay the doctors about 60 per cent. of their bills charged according to a scale of fees agreed on between the Insurance Committee and the Local Medical Committee, but this small dividend is solely because of the large number of attendances, the insignificant sum kept in hand by the Insurance Committee making no practical difference. You will see that on our system we avoid your difficulty of unallotted funds, but we have what is to my mind a far worse difficulty—namely, that payment by attendance encourages each doctor to put in as many attendances as possible.

The matter is one of considerable importance, but Dr. Taylor has stated the case clearly, and I think no comment is needed to show that the misunderstanding as to the system of payment in Manchester was Mr. Turner's, not mine.

I am, Sir, yours faithfully,
H. H. MILLS.

Oct. 8th, 1913.

THE MEDALS OF THE INTERNATIONAL MEDICAL CONGRESS.

To the Editor of THE LANCET.

SIR,—In the confusion of the Congress a box of Congress medals was lost. It may be that on this account some members of Congress or ladies may have failed to obtain them. If such persons will write to me the medals will be sent to them.

I am, Sir, yours faithfully,
W. P. HERRINGHAM,
Honorary General Secretary.

40, Wimpole-street, W., Oct. 4th, 1913.

MEDICAL MAYOR. — Mr. R. Jones Evans, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed mayor-elect for Pwllheli.

UNIVERSITY OF LONDON: UNIVERSITY COLLEGE.—In connexion with the Faculty of Medical Sciences at University College, London, the following awards have been made:—Bucknill Scholarship (135 guineas) and First Medical Exhibition (55 guineas), divided equally between M. H. Oldershaw, of the Brighton Municipal Technical College and University College, London, and D. J. Thomas, of St. David's College School, Lampeter, and University College of Wales, Aberystwyth. W. Feldman, of the Central Foundation School and University College, London, is classed as second medical exhibitioner (without emoluments). Epsom Free Medical Scholarship: E. V. Corry.—The Goldsmid entrance exhibitions have been awarded as follows:—First exhibition: T. H. Somervell, Caius College, Cambridge. Second exhibition: J. Vincent Bates, Pembroke College, Cambridge. Proxime accessit: G. Y. Oliver, University College, London.

[1] Transactions of the Royal Society of Edinburgh, 1905.
[2] THE LANCET, Jan. 2nd, 1909.

THE NATIONAL INSURANCE ACT.

SANATORIUM BENEFITS IN BIRMINGHAM.

A REPORT on the administration of sanatorium benefits for the year ending July 14th last has been issued by the Birmingham Insurance Committee. In consequence of the policy adopted by the city council it was possible to make early arrangements for the treatment of insured patients at the sanatoriums provided by the council. The first patient was admitted on August 24th, 1912, and a provisional scheme remained in force until July 14th of this year. The Local Insurance Committee has now entered into an agreement with the Birmingham corporation for a period of 30 years under which the corporation will provide the whole of the institutional treatment of insured persons suffering from tuberculosis, recommended by the committee, within the limits of the accommodation and facilities provided by the corporation's scheme for insured and non-insured persons, which when in full operation will include the following accommodation—viz., residential institutions (available for insured and non-insured persons): Yardley-road Sanatorium (including 50 beds reserved for children), 199 beds; Salterley Grange Sanatorium, 68 beds; West Heath Sanatorium, 52 beds; Romsley Hill Sanatorium, 100 beds provided by the Hospital Saturday committee, the corporation having arranged for the use of 90 beds. Dispensary accommodation is provided at the Broad-street Tuberculosis Dispensary for 2000 patients per week.

The treatment provided in the sanatoriums has been very widely appreciated, and the conduct of patients has been generally satisfactory. It has been necessary to expel a few owing to non-observance of rules, but all cases of expulsion have been investigated by the Committee and arrangements made for the patients to continue treatment in some other form, either dispensary or domiciliary. Fifty-eight patients neglected or declined to take advantage of sanatorium treatment, and 31 refused the dispensary treatment recommended. In some cases the reason given was the necessity to continue work in order to obtain means of subsistence for the family. In other cases treatment was declined because patients felt much better in health than when the application was made, and state that they will apply again if their condition changes. 1783 applications for sanatorium benefit were received, of which 1102 were from males and 681 from females. Of these 63 males and 58 females were ineligible on grounds other than health. Of the 1039 males referred by the Committee to the medical adviser for examination, 908 were members of Approved Societies, as were also 527 of the 623 females. During the year 834 males and 533 females were examined, 68 males and 20 females failed to attend for examination, and 137 males and 70 females were awaiting examination at the close of the year. Sanatorium treatment was recommended to 551 males and 347 females—337 males and 206 females to a course of six weeks; while 182 males and 152 females were ordered dispensary treatment. Domiciliary visits were suggested for 89 males and 31 females.

A table shows the occupational incidence of pulmonary tuberculosis, from which it appears the engineers sent the greatest number for treatment—this being 130 males and 18 females; while 104 general labourers were included. There are 103 domestic servants (including charwomen), 66 female press-workers, 43 warehouse workers and 36 clerks on the female side. The residential incidence varies from 3·9 per 1000 in St. Bartholomew's ward to 0·2 in North Erdington. The average for the whole city is 1·9 per 1000. The income for the year was £12,697 9*s.* 7*d.* and the expenditure £11,849 12*s.* 6*d.*, divided as follows: maintenance at sanatoriums, £6267 17*s.*; dispensary, £1142 15*s.* 6*d.*; domiciliary (estimated), £3622 10*s.* 3*d.*; medical examinations, £393; administration expenses, £350; incidentals, £73 9*s.* 9*d.*

THE MEDICAL PROFESSION IN GLOUCESTER AND MEDICAL AID ASSOCIATIONS.

At the recent quarterly meeting of the governors of the Gloucester Royal Infirmary and Eye Institution the following resolution passed by the honorary medical and surgical staff and forwarded to the general committee was read:—

That the medical staff having been appealed to by the medical men practising in the Forest of Dean and other parts of Gloucestershire to support them in their endeavour to secure adequate remuneration for contract practices, have decided that in the case of any medical aid associations having for their object the employment of medical men under conditions not approved of by the medical profession they will not, under any circumstances, meet in consultation or have professional dealings with any medical man holding office under any such association, either in the case of a private patient or at the Royal Infirmary, and they must therefore decline to treat members of such associations except in those cases urgently requiring hospital treatment.

Two other resolutions explanatory of the situation were also read. The first, which had been passed by the Gloucestershire branch of the British Medical Association, was to the effect that medical aid associations having been established in certain areas since the passing of the National Insurance Act, and having been sanctioned by the Medical Benefit Subcommittee, such action was to be deemed inimical to the interests of the medical profession and constituted a breach of faith on the part of the insurance authorities. The branch therefore called upon the staffs of the Gloucestershire hospitals to refuse to recognise professionally those holding appointments in such associations, or to treat members of them except in circumstances of great emergency. The second resolution passed at a meeting of medical men practising in the city of Gloucester was as follows:—

That this meeting of medical men in practice in the city of Gloucester considers the manner in which medical aid associations carry on their work as injurious to the interests of their patients and unfair to the doctors, and decides to refuse to recognise the staffs connected with these institutions. This meeting calls upon the staffs of all the hospitals in Gloucestershire to refuse treatment to medical aid patients except in cases of great gravity.

It is stated that the two last-mentioned resolutions have been signed by every member of the medical profession practising in the city of Gloucester.

HOSPITALS AND INSURED PATIENTS.

It is a matter of importance to hospitals, and particularly to those to the funds of which working men have been regular subscribers, that the circumstances in which, and the extent to which, insured patients are refused treatment at a particular institution should be made as clear as possible. The statement that insured persons will not be treated at a hospital is one easily made or repeated by a careless hearer without the necessary reservations, and so the story may gain ground that in no circumstances will any hospital treatment be given to a person who is insured. The usual proceeding is that all cases requiring immediate attention, as, for example, accidents, or such special treatment as only a hospital can give, will be treated, but that the hospital staff will not do for nothing that which medical men on the panel are receiving money to do. Attention has been called to this point recently at Cheltenham, and to the loss of income to which a hospital may be subjected by a misunderstanding which is excusable, but which can be removed by the proper explanation being given.

THE ALLOCATION OF INSURED PERSONS NOT MAKING THEIR CHOICE.

The question of the disposal of funds in the hands of Insurance Committees through insured persons not having chosen a medical man on the panel to attend them, and not having been distributed as the Act provides, and generall the question as to how their distribution is to be arranged for, have been occupying the attention of many committees besides that of London, including those of Cheshire, Surrey, Derbyshire, and the East Riding of Yorkshire. In the last-named district the patients who have not chosen their medical men appear to have been already distributed, but we understand that this has been done recently, and do not draw the conclusion that the difficulty which has arisen in London has been entirely avoided in the East Riding. Apparently this difficulty, which has been emphasised by the opinion obtained in London from Mr. Danckwerts, K.C., has not been before the Provincial Insurance Committees referred to, but they will now have had their attention drawn to it. The method proposed to be adopted by any committee for the assignment of insured persons to practitioners on the panel, where no choice has been made by those persons, is one of those matters which has to be submitted to the Insurance Commissioners for approval. The plan followed in the East Riding, where the Local Medical Committee was consulted, has been to assign the patients to a given medical man as far as possible in numbers bearing

the same proportion to the total number of persons to be so assigned, that the number on his list bears to the total of the insured persons who have made their choice.

MATERNITY BENEFIT AND A PROSECUTION.

The first prosecution under Section 19 of the National Insurance Act for neglect on the part of the husband to make adequate provision for his wife during and immediately after her confinement, after receiving maternity benefit, has taken place at St. Helens at the instance of the Cheshire Miners' Permanent Relief Society. The defendant received the money, gave his wife 2*s.* only, and was found lying drunk on her bed; the midwife had to buy milk for the patient and the relieving officer was called in. The defendant received a sentence of 14 days' hard labour, attention being called by the case to the provision in the section of imprisonment up to a month with or without hard labour, but without the option of a fine.

THE NUMBER OF INSURED PATIENTS TO BE ACCEPTED.

The Birkenhead Insurance Committee discussed recently the question of the number of insured patients that a medical practitioner should have on his lists. The general feeling, in the expression of which medical members of the committee took a prominent part, was that there was considerable danger of work being inadequately performed where private practice was undertaken in addition to 1500 or 2000 panel patients, the amount of private practice being an important factor. A motion was carried that the matter should be referred to the Medical Benefit Subcommittee to report upon, the chairman of the committee saying in introducing it that it would be well to know the views of the Local Medical Committee on the subject, and suggesting 2000 as a number which ought not as a rule to be exceeded. The question whether to impose a restriction might involve interference with the right of the insured to choose their doctors, he answered by saying that it was the duty of the committee to see that the insured had adequate attention, and that he had heard complaints made that insufficient attention was sometimes given.

CHANGE OF DOCTOR.

The period is approaching when patients who put themselves on the lists of those medical men who joined the panels early will find themselves able to exercise their right to select another medical attendant should they so desire, and owing to accessions to the panels will also find their range of selection enlarged. Notice has to be given in the case of desired change a month before the expiration of the existing period. It is, we fear, inevitable that it should be felt a hardship by medical men who have come late upon the panels when their former patients having the opportunity do not return to them. Equally the medical man who accepted promptly the situation created by the Act is likely to feel aggrieved when patients leave him for latecomers on the panel. It is to be hoped, however, that resentment or friction, if any arises, will be shortlived. The choice, in any case, will be that of the patient, and it has been the contention of the medical profession throughout that he should be free to exercise it.

THE BRISTOL BOARD OF GUARDIANS AND THE NATIONAL INSURANCE ACT.

At the last meeting of the Bristol board of guardians a resolution was moved to the effect that in future it should be obligatory on all officers appointed to the workhouses that they should be "on the panel" of the resident medical officer. A considerable discussion took place upon the matter, and it was stated that the motion was contrary to the provisions of the Act, which provided that insured persons should have the right under all conditions to select their own medical attendant. Eventually the proposal was defeated, on a division, by 7 votes.

ROYAL MICROSCOPICAL SOCIETY.—The next meeting of this society will take the form of a conversazione at King's College, Strand, on Wednesday, Oct. 15th, from 8 to 11 P.M.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Second Professional Examination in Anatomy and Physiology held on Sept. 25th, 26th, 29th, and 30th, for which 81 candidates presented themselves, of whom 51 were approved and 30 were rejected, the following candidates were successful:—

William Fletcher Barrett, Charing Cross Hospital; John Behesnilian, and Richard Vincent Bevan, Charing Cross Hospital and King's College; Antoun Bishara, St. Thomas's Hospital; Alberto Henriques Ferreira Bizarro, M.D. Lisbon, Lisbon University and University College; Edgar Scott Bowes, Guy's Hospital; Ingram Richard Rhodes Brogden, B.A. Cantab., Cambridge University and Guy's Hospital; Harl Chan, L.M.S. Punjab, Lahore Unversity; Raghunath Ganesh Dani, University College; Frank Philip Gilbert de Smidt, London Hospital; David McMurray Dickson, St. Thomas's Hospital; Geoffrey Barrow Dowling, Guy's Hospital; Nashed Fahmy, Cairo and King's College; Roy Fazan, Middlesex Hospital; Sourendra Mahon Ghosh, L.M.S. Calcutta, Calcutta University; Edward Austin Gibb, B.A. Cantab., St. Thomas's Hospital; Farid Yusif Hassaballa, University College; Wilhelm Otto Holst, Middlesex Hospital; John Robert John, University College, Cardiff; Llewellyn Price Johns, King's College; Dadabhai Nowroji Kalyanvala, L.M. & S. Bombay, Bombay University and University College; Theodore Louis Kan, King's College; Dhanjishaw Phirozshaw Karaka, L.M. & S. Bombay, Bombay University and London Hospital; Thomas William Le Mesurier, London Hospital; Noel Heathcote Seton Maelzer, Guy's Hospital; Francis Keene Marriott, London Hospital; Vaman Raghunath Mirajkar, L.M. & S. Bombay, Bombay University and St. Bartholomew's Hospital; Ernest Cecil de Mallet Morgan, Guy's Hospital; Frederick Maurice Mosely, B.A. Cantab., Cambridge University and London Hospital; Bidhan Prosad Mozoomdar, L.M. & S. Calcutta, Calcutta University; Sinnethamby Muttiah, London Hospital; Canapathy Pillai Nagamuttu, Ceylon Medical College and Middlesex Hospital; Wilfrid Guy Stuart Neely, L.D.S. Eng., Guy's Hospital; Baddelianage Don Hugo Philip, Ceylon Medical College and London Hospital; Robert Louis Portway, Guy's Hospital; Charles Young Roberts, St. Thomas's Hospital; Abdel Raoof Roushdy, Cairo and King's College; Percy Gunn Russell, Middlesex Hospital; Bishambhar Sahai, Calcutta University; James Ernest Scanlan, St. Mary's Hospital; Ronald James Scarr, Manchester University; John Milnes Smith, Middlesex Hospital; Godfrey Trehane Symons, King's College; John Aylmer Tippet, St. Thomas's Hospital; Martin Baird Moore Tweed, Guy's Hospital; Douglas James Valentine, London Hospital; Harry Cecil Craven Veitch, University College; Herbert Stewart Wacher and Leonard Pengelly Waghorn, Guy's Hospital; and Alban Wilson and Ismail Zaki, University College.

FOREIGN UNIVERSITY INTELLIGENCE.—*Stuttgart:* Dr. Karl Baisch, professor of obstetrics in the University of Munich, has been appointed Chief Physician to the new Gynæcological Department of the Municipal Hospital of St. Katherine.—*Vienna:* Dr. Jakob Erdheim has been recognised as *privat-docent* of Pathological Anatomy.

MANCHESTER ROYAL INFIRMARY OLD RESIDENTS' CLUB.—A meeting of this club will be held at the Midland Hotel, Manchester, on Saturday, Oct. 18th, at 6.30 P.M. The meeting will be followed, at 7 P.M., by a dinner, at which Mr. George H. Pinder will preside. Any old resident who has failed to receive a notice is requested to apply to the secretaries, Royal Infirmary, Manchester.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—The following is the result of the Entrance Scholarships examinations at this school:—University Scholarship, J. J. O. Beven (Cambridge); First Entrance Scholarship, S. C. Shaw; Second Entrance Scholarship, O. L. C. Sibley; Third Entrance Scholarship, G. F. W. Howorth; and Freer Lucas (Epsom) Scholarship, L. W. Hefferman.

DONATIONS AND BEQUESTS.—By will the late Mr. William Weir, of Kildonan, has left £10,000 each to the Glasgow Royal Infirmary and the Glasgow Western Infirmary, £5000 each to Glasgow Victoria Infirmary and the University of Glasgow for additional assistant to the professor of materia medica, £2000 each to the Kilmarnock Infirmary and the Ayr Infirmary, and £500 each to the Glasgow Eye Infirmary and the Glasgow Ophthalmic Institution.—By the death of Mr. Thomas Ryder, of Harrogate, a sum of £20,000, left by his wife to build and endow a hospital at Middleton, subject to the life interest in this sum of her husband and her mother, has now become available for building and endowing a hospital at Middleton, Lancs.—Dr. John Albert Nunneley has left a sum of nearly £45,000 before deduction of legacy duty to the Leeds General

Infirmary and the Royal Mineral Water Hospital, Bath. The first-named institution will receive two-thirds and the other one-third.

THE temporary address of the Wellcome Bureau of Scientific Research until further notice will be 54A, Wigmore-street, London, W.

THE University Scholarship at St. Thomas's Hospital has been awarded to H. H. Monk Gould, of Charterhouse and Clare College, Cambridge.

THE Order of the Red Eagle, Third Class, has been conferred upon Surgeon-General W. Schultzen, of the War Office, Berlin.

Dr. Bruegel, of Munich, has been granted the rank and title of Court Physician.

HARVEIAN SOCIETY OF LONDON.—This society will hold a clinical meeting at 8 P.M. on Thursday, Oct. 16th, at Paddington Green Children's Hospital, when Dr. Leonard G. Guthrie will take the chair. Cases will be shown by the hospital staff. Members wishing to show cases are requested to communicate with the honorary secretary, Mr. Duncan C. L. Fitzwilliams, 31, Grosvenor-street, Grosvenor-square, W.

CENTRAL LONDON THROAT AND EAR HOSPITAL.—The winter session of the Central London Throat and Ear Hospital, Gray's Inn-road, will commence on Friday, Oct. 17th, when Dr. Thomas James Walker will deliver the inaugural address, "Laryngoscopy 1860 to 1913: a Retrospect," at 3 P.M. The annual dinner of the staff with past and present students will take place the same evening at the Trocadero Restaurant, Dr. Dan McKenzie being in the chair.

LITERARY INTELLIGENCE.—We understand that a French translation by Professor Léon Guinet of the second edition of Dr. H. Charlton Bastian's work "The Origin of Life" has been published by H. Lamertin, of Brussels. The article by Dr. Bastian entitled "Spontaneous Generation: its Reality and what it Implies," which appeared in the June number of the *English Review*, has also been translated into French, and is published in the *Revue Scientifique* for Sept. 27th.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND CO., LIMITED, 44 and 45, Rathbone-place, London, W.

Historical Miniatures. By August Strindberg. Translated by Claud Field, M.A. Price 5*s*. net.

BAILLIÈRE, TINDALL, AND COX, London.

Map Scheme of the Sensory Distribution of the Fifth Nerve (Trigeminus) with its Ganglia and Connexions. By L. Hemington Pegler, M.D., M.R.C.S., Senior Surgeon, Metropolitan Ear, Nose, and Throat Hospital, &c. With Text. (Map size 4 x 5 feet, folded in cloth cover or mounted on rollers.) Price 21*s*. net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

Disturbances of the Visual Functions. By Prof. W. Lohmann, Chief Physician to the University Eye Clinic, Munich. Translated by Angus Macnab, M.B., F.R.C.S. Eng., Ophthalmic Surgeon to King Edward VII. Hospital, Windsor. Price 15*s*. net.

HEFFER, W., AND SONS, LIMITED, Cambridge.

A History of University Reform from 1800 A.D. to the Present Time. With Suggestions towards a Complete Scheme for the University of Cambridge. By A. I. Tillyard, M.A., St. John's College, Cambridge. Price 10*s*. net (postage 5*d*.).

KIMPTON, HENRY, London. STENHOUSE, ALEXANDER, Glasgow.

The Principles and Practice of Gynecology. For Students and Practitioners. By E. C. Dudley, A.M., M.D., Ex-President of the American Gynecological Society, Professor of Gynecology, Northwestern University Medical School. Sixth revised edition. Price 25*s*. net.

METHUEN AND CO., LIMITED, London.

Minds in Distress. A Psychological Study of the Masculine and Feminine Mind in Health and in Disorder. By A. E. Bridger, B.A., B.Sc., M.D., F.R.S. Edin. Price 2*s*. 6*d*. net.

NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT, 4, Tavistock square, London, W.C.

School Clinics at Home and Abroad. By Lewis D. Cruickshank, M.D., D.P.H., Medical Officer and Inspector of Physical Education, Scotch Education Department. With General Introduction by W. Leslie Mackenzie, M.A., M.D., LL.D., F.R.C.P. Ed., Medical Member of the Local Government Board for Scotland. Price 2*s*. 6*d*. net.

OXFORD UNIVERSITY PRESS (HUMPHREY MILFORD), London (Amen Corner), New York, Toronto, Melbourne, and Bombay.

Portraits of Dr. William Harvey. Published for the Historical Section of the Royal Society of Medicine. Price 21*s*. net.

REBMAN, LIMITED, 129, Shaftesbury-avenue, London, W.C.

Therapeutics of the Gastro-Intestinal Tract. By Dr. Carl Wegele. Adapted and edited, with Additions, by Maurice H. Gross, M.D., Attending Gastro-Enterologist to the Har Moriah Hospital; and I. W. Held, M.D., Attending Physician to the Har Moriah Hospital. Price 12*s*. 6*d*. net.

A Course in Normal Histology. A Guide for Practical Instruction in Histology and Microscopic Anatomy. By Rudolf Krause, A.O. Professor of Anatomy at the University of Berlin. Translation from the German by Philipp J. R. Schmahl, M.D., New York. Part II. Price 25*s*. net.

SCIENTIFIC PRESS, LIMITED, THE, London.

Treatment after Operations. By Mary Wiles, Trained at the Evelina Hospital for Sick Children and at the University College Hospital. Price 1*s*. net.

SPRINGER, JULIUS, Berlin.

Syphilis und Salvarsan. Nach einem auf dem Internationalen medizinischen Kongress in London in September, 1913, gehaltenen Referat. Von Dr. A. Neisser, Geheimer Medizinalrat, o.ö. Professor an der Universität Breslau. Price not stated.

UNIONE TIPOGRAFICO-EDITRICE TORINESE (Già Ditta Pomba), Turin, Milan, Naples, Palermo, Rome.

Prof. Guido Tizzoni. La Pellagra studiata nelle sue Cause. Price L.6.

UNIVERSITY PRESS, Manchester. SHERRATT AND HUGHES, 33, Soho-square, London, W.

Modern Problems in Psychiatry. By Ernesto Lugaro, Professor Extraordinary of Neuropathology and Psychiatry in the University of Modena. Translated by David Orr, M.D., and R. G. Rows, M.D. With a Foreword by Sir T. S. Clouston, M.D., LL.D. Second edition. Price 7*s*. 6*d*. net.

UNWIN, T. FISHER, London and Leipsic.

Lord Lister, His Life and Work. By G. T. Wrench, M.D. Lond., Author of "The Mastery of Life." Price 15*s*. net.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London. ST. JOHN AMBULANCE ASSOCIATION, London.

Pye's Elementary Bandaging and Surgical Dressing. For the Use of Dressers and Nurses. Revised and partly rewritten by W. H. Clayton-Greene, B.A., M.B., B.C. Cantab., F.R.C.S. Eng., assisted by V. Zachary Cope, B.A., M.D., M.S. Lond., F.R.C.S. Eng. Thirteenth edition. Price 2*s*.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London. THE MACMILLAN COMPANY OF CANADA, LIMITED, Toronto.

Synopsis of Midwifery. By Aleck W. Bourne, B.A., M.B., B.C. Camb., F.R.C.S. Eng., Obstetric Registrar and Tutor, St. Mary's Hospital, London. Price 5*s*. net.

YEAR-BOOK PUBLISHERS, THE, 327, S. La Salle-street, Chicago.

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M.D., and Charles L. Mix, A.M., M.D. Vol. II. General Surgery. Edited by John B. Murphy, A.M., M.D., LL.D. Series 1913. Price $2.

Vol. IV. Gynecology. Edited by Emilius C. Dudley, A.M., M.D., and Herbert M. Stowe, M.D. Series 1913. Price $1.35. (Price of the series of ten volumes, $10.)

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARLOW, W. R., M.R.C.S., L.R.C.P. Lond., has been appointed Third Assistant Medical Officer at the County Asylum, Dorchester.

BRUCE, A. NINIAN, M.D., Ch.B. Edin., F.R.S.E., has been appointed to the newly instituted Lectureship on Physiology and Diseases of the Nervous System in the University of Edinburgh.

COOKE, H. W., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Obstetric Officer at the Bristol Royal Infirmary.

ESKELL, BERTIE CECIL, M.B., Ch.B. Bristol, has been appointed Honorary Assistant Anæsthetist at the Bristol Royal Infirmary.

HENDERSON, JOHN, M.D., Ch.B. Glasg., F.R.F.P.S. Glasg., has been appointed Professor of Medicine in St. Mungo's College, Glasgow.

KAY, C. W., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Lymington District of the county of Southampton.

KERR, ROBERT ANDREW, M.B., B.Ch., B.A.O. Belf., has been appointed House Surgeon at the Bristol Royal Infirmary.

LYONS, W. CAMPBELL, M.B., Ch.B. Edin., D.P.H., has been appointed Assistant Medical Officer of Health (Tuberculosis) for the County Borough of South Shields.

O'SHAUGHNESSY, E., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Broadford District of the county of Limerick.

PARKER, GEORGE, M.D. Cantab., has been appointed Sole Lecturer in Forensic Medicine and Toxicology at the University of Bristol.

RITCHIE, JAMES, M.D. Edin., has been appointed to the newly created Professorship in Bacteriology in the University of Edinburgh.

SALISBURY, W., M.B., B.S. Lond., has been appointed House Surgeon at the Bristol Royal Infirmary.

SNODGRASS, J. E., M.B., Ch.B. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Raphoe District of the county of Donegal.

SPENCER, GORDON WINSTANLEY, M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician at the Bristol Royal Infirmary.

STATHAM, REGINALD SAMUEL SHERRARD, M.D., Ch.B. Bristol, has been appointed Registrar to Special Departments at the Bristol Royal Infirmary.

STRATON, ARTHUR A., M.B., B.S. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

WADE, E. W., M.B., B.S. Lond., has been appointed House Physician at the Bristol Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ALL SAINTS' HOSPITAL FOR OUT-PATIENTS, Buxton-street, E.—Vacancy on Honorary Staff.

BARNSLEY, BECKETT HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons, unmarried. Salaries £120 and £100 per annum, with apartments, board, and laundry.

BARNSTAPLE UNION.—Medical Gentleman to undertake care of Sick Poor of Parish of Ilfracombe. Salary £100 per annum.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—Junior House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BATH ROYAL UNITED HOSPITAL.—House Physician and House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BETHNAL GREEN INFIRMARY AND WORKHOUSE, Cambridge Heath, E.—Assistant Medical Officer. Salary at rate of £100 per annum, with apartments, board, and washing.

BIRMINGHAM, QUEEN'S HOSPITAL.—Radiographer. Salary £100 per annum.

BLACKBURN COUNTY BOROUGH EDUCATION COMMITTEE.—Medical Inspector and Assistant to the Medical Officer of Health. Salary £250 per annum.

BLOEMFONTEIN, UNION OF SOUTH AFRICA.—Bacteriological Assistant. Salary £220 per annum.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons for six months. Salary £75 per annum, with board, residence, and laundry.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRADFORD UNION, EASTBY SANATORIUM.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with rations, apartments, and laundry.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—Assistant House Surgeons unmarried. Salary £80 per annum each, with apartments, board, and laundry.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-resident House Surgeon for six months. Salary at rate of £100 per annum.

BRISTOL GENERAL HOSPITAL.—First House Physician, Second House Physician, and Casualty House Surgeon, for six months. Salary £80 per annum, with board, residence, &c.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Physician. Salary £80 per annum, with board, rooms, and attendance.

BRISTOL ROYAL INFIRMARY.—Dental House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and laundry.

BURY INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, and washing.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Pathologist Salary £40 per annum.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Surgeon.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

DOWNPATRICK, DOWN DISTRICT LUNATIC ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, attendance, &c.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £65 per annum, with board and washing.

EASTERN DISPENSARY, Lemon-street, E.—Resident Medical Officer. Salary £120 per annum, with residence and attendance.

GENERAL POST OFFICE, HEADQUARTERS MEDICAL DEPARTMENT.—Assistant on Headquarters Medical Staff. Salary £200 per annum.

GLASGOW DISTRICT MENTAL HOSPITAL, Gartloch.—Junior Medical Officer. Salary £150 per annum, with board, lodging, and laundry.

GOVAN DISTRICT ASYLUM, Crookston, near Paisley.—Second Assistant Medical Officer, unmarried.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London, N.—Resident Medical Officer. Salary £120 per annum, with board, residence, and laundry.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

HALIFAX ROYAL INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

HAMLET OF MILE END OLD TOWN.—Junior Assistant Medical Officer. Salary £120 per annum, with board, lodging, and washing.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Ophthalmic Surgeon to Out-patients. Also Medical Officer in Charge of X Ray Department. Salary 25 guineas per annum.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £70 per annum, with residence, board, and washing.

HEREFORD COUNTY AND CITY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum and all found.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Resident Medical Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Assistant Casualty Medical Officer, unmarried, for six months. Salary £30, with board, residence, &c. Also Medical Registrar. Salary £200 per annum.

HULL ROYAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with board and apartments. Also Casualty House Surgeon for six months. Salary at rate of £30 per annum, with board and lodging.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, apartments, laundry, &c.

KIMBERLEY, KIMBERLEY HOSPITAL, South Africa.—Bacteriologist and Pathologist. Salary £600 per annum and board.

KING EDWARD MEMORIAL HOSPITAL, Ealing, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

LEEDS GENERAL INFIRMARY.—House Surgeon for six months. No salary, but board, residence, and laundry provided. Also Resident Obstetric Officer for six months. Salary £50 per annum, with board, residence, and laundry. Also Resident Medical Officer for three or six months at Ida and Robert Arthington Hospitals. Salary £60 per annum, with board, residence, and laundry.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

LEICESTER BOROUGH MENTAL HOSPITAL, Humberstone.—Second Assistant Medical Officer and Pathologist, unmarried. Salary £240 per annum.

LEICESTER ROYAL INFIRMARY.—Surgical Dresser. Salary £10 10s. for six months, with board, lodging, and washing.

LEWES VICTORIA HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with apartments, board, washing, attendance, &c.

LEYTON, WALTHAMSTOW, AND WANSTEAD CHILDREN'S AND GENERAL HOSPITAL.—Resident House Surgeon. Salary at rate of £100 per annum, with rooms, board, and washing.

LIVERPOOL, PARKHILL SANATORIUM.—Resident Medical Superintendent, unmarried. Salary at rate of £400 per annum, with board, residence, and washing.

LONDON COUNTY ASYLUM, Hanwell, W.—Junior Assistant Medical Officer, unmarried. Salary £170 per annum, with board, apartments, and washing.

LONDON FEVER HOSPITAL, Liverpool-road, Islington, N.—Resident Medical Officer. Salary £250 per annum, with board and residence.

LONDON LOCK HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing. Also House Surgeon to Female Hospital, Harrow-road, W. Salary £100 per annum, with board, residence, and washing.

LONDON MISSIONARY SOCIETY, 16, New Bridge-street, E.C.—Female Medical Missionaries for Central China and South India.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon and Junior House Surgeon. Salary £100 and £80 per annum respectively, with board and residence.

MANCHESTER, CITY OF.—Two Assistant Tuberculosis Officers. Salary £300 per annum.

MANCHESTER SCHOOLS FOR MOTHERS.—Medical Officer. Salary £250 per annum.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician and House Surgeon. Salary at rate of £60 per annum, with board and washing. Also Assistant House Physician and Assistant House Surgeon. Salary at rate of £40 per annum, with board and washing. All for six months. Also Pathologist and Registrar. Salary at rate of £120 per annum. Also Assistant Physician.

NATIONAL DENTAL HOSPITAL AND COLLEGE, Great Portland-street, W.—Honorary Radiologist.

NEWCASTLE-UPON-TYNE EDUCATION COMMITTEE.—Second Whole-time Assistant Medical Officer. Salary £250 per annum.

NEWCASTLE-UPON-TYNE, HOSPITAL FOR SICK CHILDREN.—Senior Medical Officer and Junior Medical Officer for six months. Salary £100 and £80 per annum respectively, with board, lodging, and laundry.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY.—Refraction Clerk. Salary £50 per annum.

NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Lecturer in Diseases of the Throat, Nose, and Ear, Diseases of the Skin, and Diseases of Children.

NORTHAMPTON COUNTY ASYLUM, Berry Wood, Northamptom.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician. Salary £100 per annum, with board, residence, and laundry.

OLDHAM ROYAL INFIRMARY.—Second House Surgeon and Third House Surgeon for six months. Salary at rate of £100 and £80 per annum respectively, with residence, board, and laundry.

ORKNEY, ROUSAY AND EGILSHAY PARISH.—Resident Medical Officer. Salary £71 per annum.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Assistant Medical Officer. Salary £150 per annum, with apartments, board, and washing.

OXFORD EYE HOSPITAL, Walton-street.—House Surgeon. Salary £100 per annum, with rooms, board, and laundry.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and House Surgeon for six months. Salary at rate of £52 10s. per annum in each case, with board and residence.

PADDINGTON INFIRMARY.—Second Assistant to Infirmary and Medical Officer of Workhouse. Salary at rate of £100 per annum, with board, lodging, and washing.

PARK HOSPITAL FOR CHILDREN, Hither Green, London, S.E.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PORTSMOUTH ROYAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, &c.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Assistant Ophthalmic Surgeon. Also Senior House Physician and Senior House Surgeon. Salary £75 each per annum. Junior House Physician, Assistant Pathologist, and Junior House Surgeon. Salary £60 each per annum, with residence, board, and laundry. All for six months.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Assistant Physician. Also House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Male and Female House Physicians and House Surgeons for six months. Board, lodging, and washing provided. Also Female Junior Obstetric Assistant for six months. Board, lodging, and washing provided. Also Female Medical Registrar.

ST. GILES, CAMBERWELL, INFIRMARY, Brunswick-square, Camberwell.—Junior Assistant Medical Officer. Salary £120 per annum, with apartments, board, and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Junior Resident Medical Officer for seven months. Salary at rate of £70 per annum, with residence, board, and laundry.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.—Honorary Ophthalmic Surgeon.

SCALEBOR PARK ASYLUM, Burley-in-Wharfedale.—Assistant Medical Officer. Salary £180 per annum, with board, apartments, attendance, &c.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior House Surgeon and Junior House Surgeon. Salary £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with apartments, rations, &c.

SHREWSBURY, SALOP INFIRMARY.—House Physician. Salary at rate of £90 per annum, with board and apartments.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and attendance.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £180 per annum, with apartments, board, washing, attendance, &c.

TUNBRIDGE WELLS, ROYAL BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.

VIRGINIA WATER, SURREY, HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE.—Junior Assistant Medical Officer. Salary £250 per annum, with board, lodging, laundry, and attendance.

WAKEFIELD GENERAL HOSPITAL.—Second House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST HAM UNION INFIRMARY, Whipps Cross-road, Leytonstone, N.E.—Third and Fourth Resident Medical Officers. Salary £150 and £140 per annum respectively, with the usual residential allowances.

WEST RIDING OF YORKSHIRE.—Dispensary Tuberculosis Officer. Salary £400 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary at rate of £120 per annum, with board and lodging.

WILLESDEN URBAN DISTRICT COUNCIL ISOLATION HOSPITAL, Neasden.—Assistant Medical Superintendent, unmarried. Salary £150 per annum, with board, lodging, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £140 per annum, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

BOULTON.—At Rockcliffe, Mussoorie, India, to Major Harold Boulton, I.M.S., and Mrs. Boulton (*née* Maud Mary Garton), a daughter.

RIDOUT.—On Sept. 30th, at St. Elmo, Clarendon-road, Southsea, Hants, to the wife of C. A. Scott Ridout, M.S., F.R.C.S., a son.

MARRIAGES.

BENNETT—TAYLOR.—On Oct. 3rd, at St. Clement's Church, Ste. Madelaine, Trinidad, Richard Charles Bennett, M.B., C.M., to Rose Florence, elder daughter of Mr. and Mrs. G. W. Taylor, "Cliftonville," The Polygon, Southampton.

DEATHS.

FAIRBANK.—On Oct. 3rd, suddenly, at Felixstowe, Caversham, Oxon., Frederick Roy ston Fairbank, M.D., F.S A., aged 72 years.

THORP.—On Oct. 3rd, at Henley-road, Ipswich, from pneumonia, Henry John Thorp, M.D., aged 81 years.

WALKER.—On Sept. 30th, as the result of an accident, Henry George Walker, M.D.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH AND HOSPITALS IN GAMBIA.

A REPORT by Mr. W. T. Campbell, Colonial Secretary of Gambia, on the Blue-book of the colony for 1912 has been issued as a Parliamentary paper. It gives the population of the colony as 7700 and of the protectorate as 149,468. The number of Europeans, including females, residing in the colony and protectorate during the year was 198. Of these, 17 were invalided and 3 died. The general health was satisfactory and the year was fortunately free from yellow fever, of which there had been an outbreak in 1911. There were 1914 vaccinations performed in Bathurst and 867 in the protectorate. Arrangements have been made for a medical officer to travel through the protectorate and carry out vaccinations, and it is hoped that this will give more satisfactory results. The campaign against mosquitoes has been vigorously carried out, and has resulted in greatly diminishing their number. After the last case of yellow fever in November, 1911, the fumigation of all Government quarters, cellars, and many private buildings was undertaken. The stegomyia species of mosquito has almost disappeared. Among the mosquitoes found in different parts of Bathurst at the end of the year only two were stegomyia; the remainder were mainly culex. The clearing of about 40 acres of mangrove on the western side of the town has greatly diminished the number of mosquitoes in that quarter. The climate of the Gambia is pleasant during the dry season, which lasts from November to May. For the remaining months the conditions are similar to those experienced elsewhere on the West Coast of Africa. The damp and enervating weather is very oppressive and more generally felt, after the several rainless months, than is the case elsewhere. The highest shade temperature recorded in Bathurst in 1912 was 104° F. and the lowest 58°. The rainfall was 33·99 inches.

The hospital at Bathurst has accommodation for 4 first-class, 11 second-class, and 10 third-class male patients and 15 female patients, including two cots for children. There are also four rooms for isolation cases. The wards for males and females are in separate buildings. A new hospital at MacCarthy Island was opened in 1911, and is in charge of a European medical officer. It contains a ward for Europeans and three wards for native patients. There is also a contagious diseases hospital, situated about two miles from Bathurst. Four mild cases of small-pox, all of which recovered, were treated in this building during the year. The total number of patients treated in the Bathurst Hospital was 529, of whom 33 died, and in the out-patients' department 7895. At the MacCarthy Island Hospital 66 in-patients and 1356 out-patients were treated.

A DELETION FROM THE MEDICAL DIRECTORY.

To the Editor of THE LANCET.

SIR,—I asked the authors of this useful book if they intended to indicate a practitioner was "on the panel," and they inform me they do not mean to show the distinction. The Directory will be worthless to me, and I have told them to delete my name. I do not intend that the public shall wonder whether I am a "panel doctor." This matter is of immense importance to the profession and the public generally.

I am, Sir, yours faithfully,

JAMES BRASSEY BRIERLEY, M.D. Edin.

Manchester, Oct. 6th, 1913.

TUBERCULOSIS AND THE CINEMATOGRAPH.

To the Editor of THE LANCET.

SIR,—Can any of your readers tell me where cinematograph films suitable to illustrate a popular lecture on consumption can be obtained?

I am, Sir, yours faithfully,

Earl Shilton, Hinckley, Oct. 6th, 1913. PHILIP GELL GARRETT.

"WORM NODULES" IN AUSTRALIAN BEEF.

THE Australian Institute of Tropical Medicine, established in 1908 and enlarged in 1912, has already done good work. The annual report for 1911, now before us, is written by the director, Dr. Anton Breinl, in collaboration with his two colleagues, Mr. Frank H. Taylor, F.E.S., and Dr. T. Harvey Johnston, D.Sc. The institute, situated at Townsville in North Queensland, now receives an annual subsidy of £4000 from the Federal Government of Australia, and judging from the report now before us has already more than justified its existence. One of the chief investigations carried out was that directed towards the solution of the problems connected with the occurrence of "worm nodules" (onchocerciasis) caused by Onchocera gibsoni in Australian beef, an important subject to which we directed the attention of our readers in THE LANCET of Feb. 4th, 1911. Although the researches undertaken by the experts of the Australian Institute have not succeeded as yet in demonstrating the complete life-history of the parasite, it may nevertheless be said that these investigations have cleared up

a number of doubtful points; they have, for instance, definitely excluded mosquitoes, stomoxys calcitrans, and leeches as being intermediary hosts. Unfortunately, the wet season of 1911 was light and therefore unfavourable to the inquiry, experience having shown that the best opportunities for such a research are furnished by a heavy wet season in which a rich insect fauna is present.

THE INDIAN CIVIL SURGEON OF THE PAST.

A DESCRIPTION in the *Indian Planter's Gazette* of the civil surgeon of the dim past shows the progress made in India in the matter of medical attendance:—

> You would hardly guess from his appearance and ways that he was a surgeon and a medical man. He certainly does not smell of lavender or peppermint, or display fine or curious linen, or tread softly like a cat. Contrariwise he smells of tobacco, and wears flannel underclothing. His step is heavy. He is a gross, big, cow-buffalo sort of man, with a tangled growth of beard. His ranting voice and loud familiar manner amount to an outrage. He laughs like a camel, with deep bubbling noises. Thick corduroy breeches and gaiters swaddle his shapeless legs, and he rides a coarse-bred Waler mare. I pray the gods that he may never be required to operate upon my eyes, or intestines, or any other delicate organ.

THE IDEAL BREAKFAST.

To the Editor of THE LANCET.

SIR,—*A propos* of your recent annotation on "meals" may I suggest that—

"*Un œuf* is as good as a feast"

sums up the true philosophy of breakfast diets.

I am, Sir, yours faithfully,

Oct. 8th, 1913. W. B. A.

MEDICAL AFFAIRS IN FIJI.

THE report on the Blue-book of this colony for the year 1912 estimates the total population at 149,179, made up of 4131 Europeans, 2512 half-castes, 48,614 Indians, 2769 Polynesians, 1965 Rotumans, 87,833 Fijians, 397 Chinese, and 958 others. The total rainfall recorded at Suva during the year was 115·406 inches. The highest temperature in the shade was 92·0° F. on March 18th, and the lowest 60·0° on August 25th. The Colonial Hospital at Suva, the principal medical institution, is under the charge of a resident medical officer, assisted by a junior medical officer, a matron, two staff nurses, one graduate nurse, and six pupil nurses, the whole being supervised by the chief medical officer. Admissions during 1912 numbered 1728, of whom 211 were Europeans. There is a branch hospital at Levuka under the charge of the district medical officer, assisted by a matron. This institution provides for the treatment of Europeans as well as natives. There are eight provincial hospitals for the treatment of native Fijians. These are supervised by Government medical officers. The number of admissions to these provincial hospitals during 1912 was 3917. There is a leper asylum on the island of Makogai, under the charge of a medical superintendent, assisted by two European nursing sisters and two native medical practitioners. On Dec. 31st, 1912, there were 154 lepers in the asylum. The work of collection and transportation of lepers formerly residing in all parts of the colony is now nearing completion.

M.D. (Accrington).—Yes.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 8th, 1913.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct.	2	29·85	N.E.	...	94	67	57	59	61	Fine
,,	3	29·93	S.	...	107	66	55	56	56	Fine
,,	4	29·82	S.	...	75	65	54	55	55	Foggy
,,	5	29·63	S.W.	0·19	87	59	52	53	55	Cloudy
,,	6	29·68	N.E.	0·02	105	66	50	51	52	Fine
,,	7	29·54	E.	0·07	79	61	52	56	56	Raining
,,	8	29·37	S.W.	0·50	90	60	54	55	55	Cloudy

The following journals, magazines, &c., have been received:—Dominion Medical Monthly, Homœopathic Recorder, Quarterly Journal of Medicine, Indian Medical Record, Edinburgh Medical Journal, Archives of Pediatrics, Middlesex Hospital Journal, Child, St. Bartholomew's Hospital Gazette, British Journal of Dental Science, Annales de l'Institut Pasteur, Annales de Gynécologie, South African Medical Journal, American Journal of Orthopædic Surgery, Pediatrics, Therapeutic Gazette, American Journal of Medical Sciences, Medical Review, Quarterly Journal of Experimental Physiology, Revista de Chirurgie, Revista de la Sociedad Médica, &c.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY.

SPECIAL MEETING OF FELLOWS: at 5.30 P.M.

Demonstration by Dr. Hideyo Noguchi of the Rockefeller Institute.

(1) Pure Cultures of Various Spirochætæ (Treponema pallidum, T. pertenue, T. microdentium, T. macrodentium, T. mucosum, T. calligyrum, T. refringens).
(2) Transmission of Syphilis to Animals by means of Pure Cultures of Treponema pallidum.
(3) Demonstration of Treponema pallidum in the Brain of General Paralytics.
(4) Transmission of Treponema pallidum from the Brain of General Paralytics to the Rabbit.
(5) Production of Symptoms and Lesions resembling General Paralysis in the Rabbit by means of an Intracerebral or Subdural Inoculation with Treponema pallidum.
(6) Cultural Studies of the Virus of Rabies.

Illustrated by Lantern Slides.

TUESDAY.

SECTION OF SURGERY (Hon. Secretaries—J. Murray, Raymond Johnson): at 5.30 P.M.

Mr. Charles A. Pannett: The Selection of the Incision in Cœliotomy.

Mr. Frank Kidd: Pyeloradiography.

Short Historical Survey and Description of the Method. Applications in Practice. Examples will be shown to Illustrate the Diagnosis of Congenital Abnormalities of the Kidney and Ureter, Dilatation of the Kidney, Stone in the Kidney, Abdominal and Renal Neoplasms, &c. Skiagrams exhibited by Mr. Gilbert Scott. Experimental Studies to show the Effect on the Kidney of the Injection of Colloid Silver into the Renal Pelvis. Pathological Reports by Dr. H. M. Turnbull. Experimental Work by Mr. E. C. Lindsay.

THURSDAY.

SECTION OF DERMATOLOGY (Hon. Secretaries—J. M. H. MacLeod, S. E. Dore): at 5 P.M.

Dr. Haldin Davis: Demonstration of Coloured Lantern Slides of Skin Diseases made by the Paget Prize Process.
Dr. Knowsley Sibley: Case of Nævus Linearis Bilateralis.
Dr. J. M. H. MacLeod: Case for Diagnosis.

And other Cases.

FRIDAY.

SECTION OF OTOLOGY (Hon. Secretaries—G. J. Jenkins, G. N. Biggs): at 5 P.M.

Mr. W. M. Mollison: Case of Fracture of the Skull with Injury to the Cranial Nerves.
Mr. Sydney Scott: Case of Purulent Lepto-meningitis with Rapid Recovery after Trans-labyrinthine Operation.

And other Cases.

SECTION OF ELECTRO-THERAPEUTICS (Hon. Secretaries—Cecil R. C. Lyster, S. Gilbert Scott): at 8.30 P.M.

Clinical Evening:

Members are invited to bring Specimens, Cases, or Plates.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8 P.M., General Meeting. 8.30 P.M., The President (Sir David Ferrier, M.D.):—Introductory Address. Paper:—Dr. F. Buzzard: Varieties of Facial Spasm and their Treatment.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

FRIDAY.—5 P.M., Prof. Keith: Specimens illustrating the Lesions of Achondroplasia, Osteogenesis Imperfecta, and Allied Conditions. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. N. Meachen: Clinique (Skin). 5.15 P.M., Lecture:—Dr. F. E. Batten: The Use of Celluloid Splints in the Treatment of Acute Cases of Poliomyelitis and Other Nervous Disorders.

TUESDAY.—4 P.M., Dr. H. Campbell: Clinique (Medical). 5.15 P.M., Lecture:—Dr. C. Lockyer: Prolapse.

WEDNESDAY.—4 P.M., Mr. E. C. Hughes: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. S. E. Dore: Alopecia and its Treatment.

THURSDAY.—4 P.M., Mr. A. H. Tubby: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. E. A. Cockayne: Jaundice.

FRIDAY.—4 P.M., Mr. R. R. James: Clinique (Eye). 5.15 P.M., Lecture:—Dr. H. C. Miller: Clinical Psychology—3. The Methods and Technique of Psycho-Therapy.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Owen: Aneurysm.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Dr. Owen: Aneurysm.

WEDNESDAY.—Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Owen: Aneurysm.

THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. T. Gray: Disturbances of the Motor Functions of the Intestines.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Lecture:—Dr. Owen: Practical Medicine. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Mr. T. Gray: Disturbances of the Motor Functions of the Intestines.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 12 noon, Mr. Souttar: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat. 3.15 P.M., Special Lecture:—Sir Dyce Duckworth: Endocarditis and its Sequels.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine. 4.30 P.M., Special Lecture:—Dr. C. Zundel: Heart Block.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine. 4.30 P.M., Special Lecture:—Mr. C. Rowntree: Common Affections of the Anus.

FRIDAY.—Out-patient Demonstrations;—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford; Medicine 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—10 A.M., Col. Barry: Radiography.

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WEDNESDAY.—4.30 P.M., Lecture:—Dr. Inman: The Behaviour of the Blood in Response to Tuberculous Infection.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Vascular Lesions of the Brain.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Inflammatory Lesions of the Brain.

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MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

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TUESDAY.—SALFORD ROYAL HOSPITAL—4.30 P.M., Dr. F. E. Tylecote: Some Recent Cases of Nephritis.

WEDNESDAY.—ROYAL INFIRMARY 4.30 P.M., Exhibition of Medical and Surgical Cases in conjunction with the Medical Society.

THURSDAY.—ANCOATS HOSPITAL—4.30 P.M., Mr. W. R. Douglas: Surgical Aspect of Gastric Carcinoma.

FRIDAY.—ROYAL EYE HOSPITAL—4.30 P.M., Dr. H. H. McNabb: Detection of Opacities in the Media.

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FRIDAY.—10 A.M., Gynæcological Lecture: Tumours of the Ovary. 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

April 26th–Nov. 5th (Ghent).—International Exhibition.
May 31st to October (London, Earl's Court).—Imperial Services Exhibition.
May–October (Leipzig).—First International Building Exhibition.
June 24th–Oct. 31st (London. 54a, Wigmore-street).—Historical Medical Museum. (Organised by Mr. Henry S. Wellcome.)
June–October (London, Crystal Palace).—Anglo-German Exhibition.
Oct. 1st–Nov. 1st (London, Shepherd's Bush).—National Gas Exhibition.
,, 9th–25th (London, Olympia).—Ideal Home Exhibition.
,, 22nd–25th (Berlin).—Eleventh International Anti-Tuberculosis Conference.
,, 28th–Nov. 1st (London, Royal Horticultural Hall).—Twenty-fourth Universal Cookery and Food Exhibition.

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